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THE

WORKS

OF

John Fothergill, M. D.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS, AND FELLOW OF THE ROYAL SOCIETY, OF LONDON;

AND OF THE ROYAL COLLEGE OF PHYSICIANS IN EDINBURGH;

AND CORRESPONDING MEMBER OF THE ROYAL MEDICAL SOCIETY OF PARIS.

By JOHN COAKLEY LETTSOM.

Ιητρὸς γαρ ἀνηρ πολλῶν ἀντάξιος ἄλλων.

HOM. Iliad, xj. 514.

VOL. I.

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CUI SUAS ARTES, SUA DONA LÆTUS
ET HERBAM ET VENÆ SALIENTIS ICTUM
SCIRE CONCESSIT, CELEREM ET MEDENDI
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PREFACE.

IT is by no means requiſite to apprize the Public of the importance of the following Eſſays: the general eſtimation of the writings of the late Dr. FOTHERGILL, is ſuch, as to preclude any apology for giving a complete edition of them; and the detached manner in which they have been publiſhed in different works, while it augments the difficulty of collecting them together, will doubtleſs render ſuch a collection more acceptable to the Public.

The Eſſays are not arranged exactly in the order of time, in which they were originally written; as they were diſperſed in various works, the Editor was more ſolicitous of extracting them from each publication collectively, than of preſerving chronological order, as they admit in ſome reſpects of diſtinct diviſions: thus, after the Inaugural Theſis, the Meteorological Pieces from the Gentleman's Magazine are introduced;

theſe are ſucceeded by others from the Philoſophical Tranſactions, chiefly comprizing Natural Hiſtory; the Practical Eſſays from the Medical Obſervations and Enquiries, follow next; and afterwards the Biographical and Miſcellaneous Diſſertations: and it happens at the ſame time, that this arrangement does not materially interrupt the chronological order, and where it does, it may be reſtored at pleaſure, by referring to the title of each article, in which is ſpecified the time of its publication. But to remove any inconvenience or objection from the circumſtance alluded to, the work will be concluded with a complete chronological table of contents, including the poſthumous eſſays, which, with thoſe addreſſed to the Editor, conſtitute a conſiderable part of the preſent collection.

By the partiality indeed of correſpondents, much more has been communicated to him than he has ventured to publiſh. Few men wrote more than Dr. FOTHERGILL has done, or more uſefully; and were all his letters and manuſcript eſſays, of which the Editor could enumerate upwards of one hundred in his own poſ-

ſeſſion, laid before the public, perhaps the importance of the Doctor's life, and the utility and magnitude of his employments, would appear ſuch, as might even elevate his character, and give it additional luſtre. But fearful leſt the partiality, which the veneration of an individual entertained for his character, might bias his judgment, and excite an over officiouſneſs in communicating to the public, what that public might not place in the ſame favourable point of view; he has been induced to do violence to his own feelings, rather than ſubject himſelf to the cenſure of doing any thing that could poſſibly tarniſh the character of a man, who paſſed through life with unſullied reputation, and died in the zenith of glory.

Whilſt the Editor thus avows his diffidence, and the cauſe of that diffidence, they, whoſe ſentiments of poſthumous character coincide with his own, will be the laſt to cenſure him for this conſideration: he is, however, gratefully prompted to acknowledge the important communications, and the kind aſſiſtance of many reſpectable individuals; and particularly, of David Barclay, of Youngſbury; Dr. Cum-

ing,

ing, of Dorcheſter; Joſeph Cockfield, of Upton in Eſſex; Thomas Collinſon, of Southgate; Dr. Dobſon, and Dr. Falconer, of Bath; Dr. Anthony Fothergill, of London; John Nichols, Printer of the Society of Antiquaries; John Payne, Accomptant General of the Bank of England; Thomas Pennant, Eſq; the Britiſh Linnæus; Dr. Percival, of Mancheſter; Henry Smeathman, Author of the Hiſtory of the Termites; Dr. Whitehead, of London, particularly for his Aſſiſtance through the whole edition; Dr. Zouch, an eminent Clergyman and Juſtice of the Peace, of Sandal in Yorkſhire; and of the Family of the Deceaſed, as well as of the Relations of the late Dr. Ruſſell.

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Diſſertatio

Dissertatio Medica

INAUGURALIS,

De Emeticorum Usu in variis Morbis tractandis:

QUAM,

FAVENTE SUMMO NUMINE,

Ex Auctoritate amplissimi SENATUS ACADEMICI,
et nobilissimæ FACULTATIS MEDICÆ *Decreto;*

PRO GRADU DOCTORATUS,

SUMMISQUE IN MEDICINA HONORIBUS ET PRIVILEGIIS, RITE AC LEGITIME CONSEQUENDIS,

Eruditorum examini subjicit,

JOANNES FOTHERGILL,
ANGLO-BRITANNUS,

Ad Diem 13 Augusti, *horâ locoque solitis.*

EDINBURGI,
M,DCC,XXXVI.

THE following Inaugural Theſis was written when the Author was little more than twenty-one years of age, and before Baron de Haller's immenſe work of Phyſiology made its appearance, and diffuſed new light upon the Nervous Syſtem.

Publications, under the character of Juvenile Attempts, do not always afford concluſive evidence of a riſing and ſuperior genius; they are too frequently the productions of indigent individuals, who are always to be found in colleges, and who ſubſiſt by the indolence or ignorance of wealthier ſtudents, furniſhing them with performances to which they have no better claim than what the mere exhibition of their names on a title page gives them. But whatever merit may be found in this Eſſay, I have authority to ſay, that it was the genuine production of the author, under whoſe name it was publiſhed, without any aſſiſtance either in the matter or the compoſition.

The ſubject is an important one, and too generally intereſting for the Public not to wiſh for a tranſlation of it into Engliſh, eſpecially as moſt of the Doctor's ſubſequent pieces were originally written in that language.

E.

Viris

Viris præclaris,

Præceptoribus ſuis plurimùm colendis,

JOANNI RUTHERFORD, Med. Doct. atque in Academia Edinburgenſi Medicinæ theoreticæ & practicæ Profeſſori:

ANDREÆ ST. CLAIR, Med. Regio, Medicinæ theoreticæ & practicæ in eadem Academia Profeſſori:

ANDREÆ PLUMMER, Med. Doct. atque ibidem Medicinæ & Chemiæ Profeſſori:

ALEXANDRO MONRO, R. S. S. & in eodem Lyceo Anatomiæ & Chirurgiæ Profeſſori:

NEC NON

CAROLO ALSTON, Med. Doct. & Reg. Botanices Profeſſori:

Ob plurima in ſe collata beneficia, hoc ſpecimen inaugurale, quod exegit mos laudandus Academiæ,

Omni quo par eſt obſequio
& exiſtimatione offert

JOANNES FOTHERGILL, *A. & R.*

Dissertatio Medica
INAUGURALIS,

De Emeticorum Usu in variis Morbis tractandis.

PROŒMIUM.

QUUM corporis vigor, mentis acumen, salus perfecta præsens, futuræ stabilimen, vitæ constantis et integræ dulcedo, magnâ ex parte ventriculi, visceris prænobilis, fata sequantur; nihil arduum aut molestum ducebant tum veteres tum recentiores medici, quo minus in vado esset tantæ utilitatis negotium. Experientia gnari facti fuerunt, si sospes esset ventriculus, minus metuendum esse reliquis; eo autem malè se gerente, incolumem diu hærere totius corporis fabricam non posse. Indies quoque compertum est, quòd arthritis, hydrops, scorbutus, tabes, insania, febresque pessimæ (et si quæ graviora mala supersint, et hominibus infensa magis,) rariùs attollunt capita, illæso interim ventriculo: et si forte nascantur aliunde, sæviunt eò magis, quo magis à sanitate recedit princeps hæc ani-

malis officina. Hinc itaque liquet, quantum naturæ ministris incumbit, ejus incolumitati enixè prospicere. Ipsius autem ventriculi, ejusque contentorum vitia, tum et morbi exinde nati, quorum fibræ altiùs hærent, opem sæpe poscunt, quæ depletione tentatur; neque ad culpam horum delendam, prognatasque labes eradicandas, feliciùs adhibetur sæpissime remedium, quàm evacuatio per vomitum facta. Hac unicâ intentione adeo celebrata fuit Emesis apud veteres medicinæ patronos; ut etiam sanis, si sani perstare voluissent, hoc medicinæ genus præscripserit *(a)* Hippocrates, quod sæpius repetendum suasit, licet aspera et intractabilia admodum essent medicamenta vomitoria, veteribus familiaria; nec certe sine decumbentium fastidio, vel medicorum sollicitudine, porrigenda.

PARS PRIMA.

1. EST autem vomitus ea ventriculi, diaphragmatis, et musculorum abdominalium actio, quâ illius contenta, quasi inter præla compressa, vi magnâ sursum per os rejiciuntur. Horum siquidem viscerum contractione sursum urgentur omnia in abdomine contenta viscera, constringitur inde pylorus, dum quæ in ventriculo hæret materies, illius *(b)* et ambientium vi musculari in orificium ejus superiùs impressa, illud

(a) Hippocrates de diæta, lib. 3. & alibi passim.
(b) Wepfer de cicuta aquatica, cap. 15. Hist. 1.

dilatat,

dilatat, et per contractas œsophagi fibras longitudinales facilem sibi parat exitum.

2. Stimulus quicunque validus, ventriculo inditus, ejusque nervis applicatus, actionem hanc incitare potest, ob commercium quod obtinent ventriculi nervi cum eis, qui musculis abdominalibus et diaphragmati inserviunt.

3. Copia etiam ingestorum nimia atque moles, licet haud alio, saltem parum ingrato potiantur aculeo, nauseam, deinde vomitum excitare queunt; cujusmodi sunt, aqua egelida, aromatibus imbuta, suaviaque, nec non dapes illæ quæ gustui summopere blandiuntur, avidè et sine norma deglutitæ; quicquid porro nervos ventriculi irritat, aliâve aliquâ ratione æquabilem horum liquidi fluxum perturbat admodum, vomitionem ciet; qualia sunt capitis contusio vel concussio vehemens, jactatio in nave vel rheda inassuetis, valida imaginatio, sive rei cujusdam injucundæ memoria; hæc enim aliaque similia delicatulos summo urgent quandoque fastidio vomituque.

4. Attamen compertum est, objecta omnia, stimulo licet prædita, haud æquè certò vires suas in ventriculum vicinaque exerere, sed nunc per unum ex emunctoriis, nunc per alterum, promovere secessum: quædam itaque quæ ferè perpetuò vomitum producere constabat, quæque præ cæteris huic muneri obeundo maximè accommodata esse docebat experientia, in unicum hunc usum sepositi vetustas. Ἐμετικὰ hæc appellabant Græci, VOMITORIA Latinis audiunt.

5. Mancus verò fuit horum apud veteres catalogus, licet amplus; pauca enim vomitoria

cognita habuerunt, quæ non acerba admodum et inclementia, vel lenia prorsus et invalida, comperiuntur; si modo simplicia eadem, eisdem insignita titulis, apud nos hodie prostant, ac apud istos olim: uti cuique patebit, antiquorum scripta evolventi. Veratrum aliquando lethale fuit, infida quoque aliorum actio. Non mirum itaque, si morbo graviore torqueri, vel ad aliud quodcunque subsidii genus confugere maluerint ægroti, quàm durum et immite, vel lenius, at incertum, sæpe infructuosum, experiri medicamen: quo contigit ut absterritus quandoque æger, medicum abhorreret; medicus pariter medelam, quæ tanta pollicita est, propinare dubitaret: unde uterque incommodum haud leve sæpius tulit. Atque licet Hippocrates rationem intellexerit temperandi emetica; alii tamen multi, minus solertes, spe suâ sæpe exciderunt. Neque chemia, quæ tot præclara medicamenta detexit, ulla fere suppeditat emetica, quæ tenellis et delicatioribus tutò dare licet: quin et dolebat suo tempore Sydenhamus, desiderari adhucdum emeticum *tutum, et satis interim efficax*, quale in celebri radice Ipecacuanha passim hodie experiuntur practici. Hujus instituti non est, singula, quæ vi emeticâ pollent, recensere, horum saltem classes ratione virium indicâsse sufficiat.

6. In *lenia, vehementiora,* et *fortissima* vomitoria, distinguendi hunc evacuantium ordinem, mos quibusdam obtinuit: nec quidem ineptè; diversa enim ista simplicia, quæ ad vomitum ciendum hodie usurpantur, commodè satis sub triplici

triplici hac serie dispertiri possunt. Nulla tamen fides efficaciæ, sensibus patefactæ, odori saporive videlicet, habenda est: sed experientiæ soli horum credenda distributio.

7. Emetica quæ *lenia* appellantur, gemini sunt ordinis; 1*mo*, Recensentur ea quæ mole suâ, vel irritamine levi, moli unito, stomachum lacessunt; qualia sunt, aqua tepida, viscosa, saccharata, mellita, oleosa, salita, jura pinguia, infusa theæ viridis, cardui benedicti, florum chamæmeli, aliaque ejusmodi plura, ex diversis plantis aromaticis elicita. 2*do*, Huc pertinet emetici cujusdam fortioris dosis refracta, quæ stimulo gaudet tam valido, ut nauseam, vomendique conatum unum alterumve provocare possit, nec ampliùs urgeat. Ex salium numero hæc plerumque petuntur, quæ humoribus gastricis statim solvuntur, et celeriter undiquaque dispersa, applicantur nervis, mox sursum rejiciuntur, penitusque epotis liquidis eluuntur soluta, ut brevi quiescant omnia. Filum per œsophagum trajectum, irritatio gulæ, per pennam oleo madefactam; idea fastidiens, inassueta navis agitatio, currûs per loca aspera ducti conquassatio, animi denique pathemata leviora huic ordini consentiunt. Noviſſimè tamen memoratas causas quibusdam vomitiones inducere perquam violentas haud diffiteor; pleriſque verò non item, neque eos diu et fortiter simul molestare solent.

8. *Fortiorum* classis fit ex prioribus § 7. *n.* 2*do*, auctâ saltem dosi, vel causâ; aut ex iis quorum firmior compages, et hinc tardior effectus, sed vehementior: namque emissæ particulæ vellicantes,

tes, paulatim in cryptas plicasque ventris rugosi sese insinuant, nervulis adhæresçunt, molestiam creant, augentque, nec ingeminato vomendi nisu, velatis sedibus excutiuntur, usque donec eorum vires repetito opere decoquantur; hinc emesis protractior, nec non vehementior. Medicamenta pleraque sursum purgantia, hodiernâ praxi maximè usitata, huic classi addenda sunt, uti v. g. asarum, ipecacuanha, radix raphani rusticani, semen sinapis, scilla, horumque variæ præparationes, combinationes, ex vegetabilibus. Ex metallicis sales quidam Chemiæ progenies, ut vitriolum Martis, et salia vitriolica: sed palmam præ aliis meruisse videntur, quæ ex Venere acquiruntur, sal sc. cupri ejusque tinctura. His addendi sunt tartarus emeticus, et quorundam ex serie sequenti imminuta dosis.

9. *Fortissima* nuncupare licet ea, quæ ars dogmatica et maximè rationalis, ob sævos et atroces effectus sæpius expertos evitat, quæque non sine imminente machinæ periculo exhiberi posse perennis docuit observatio, quæ rariùs, nisi ab audaci medicastro, vel in morbo quodam acerrimum poscente auxilium, à methodico præscribuntur; licet inter hanc et prægressam classem, exquisitas metas apponere, difficile quidem sit. Plurima hujusmodi suppeditat vegetabile regnum: eminent imprimis καθάρσια purgantia, quorum amplificata dosis, præsertim si ex resinosis desumatur, crudeles vomitus frequenter excitat. Resinosa etenim humoribus nostris parum miscibilia sunt, indissoluta cavo ventriculi accrescunt, summos concitant dolores, spasmos, et immanes

per

per superiora depletiones: evincunt hoc cruciatus isti, qui ægrotis superveniunt post ingestam jalapi resinam, aut ejusmodi quodpiam, non rite per attritum solutum, vel miscibile aliâ quavis ratione factum; dum forte nativo suo sapone fraudantur humores inquilini, et aquosâ pituitâ plena sunt omnia. His annumerari possunt, helleborus albus, tithymali species nonnullæ, nicotiana, et plantæ aliæ permultæ *deleteriæ* dictæ: classem augent, stibiata acriora, et illa quoque emetica quæ dat Mercurius, unà cum plerisque metallicis venenatis.

10. Ex tradita hactenus descriptione liquet, 1*mo*, Vomitum excitari non posse, sine quodam aculeo (intelligi velim omne id, quod liquidi vitalis fluxum sive nervorum actionem mutare queat) systematis nervosi regioni cuidam applicato. 2*do*, Quòd ex illius in nervos, horumque in musculos, § 1. actione, necessariò fit contentorum gastricorum evacuatio, denique 3*tio*, Quòd hæc neutiquam evenire possint, sine partium quarundam compressione forti, aliarum ingenti concussione, et insigni corporis universi motu. Leniissimæ etiam vomitioni hæc semper adsunt: crescunt ut extenditur emetici potentia, et adaucto stimulo, usque in fabricæ ruinam evehi possunt.

11. Quum itaque præfatæ conditiones nunquam non Ἐμέσει conjunguntur, quum ab hisce omnino pendeant pleræque ex iis mutationibus quæ ab emeticis sperantur, producuntur; effectus horum ex triplici illa causa nascentes, quinam sint,

rimaturus, his quæsitis responsa expediam; scil. Quid valeat emeticum, quatenus est stimulus? Quatenus evacuet? Quatenus denique vi suâ mechanicâ totum corpus afficere queat?

PARS SECUNDA.

De Emeticorum usu, à stimulo suo derivato.

12. NULLA adhuc instrumenta in corpore animali invenit anatome, quæ stimulorum objecta propriè existimari possunt, præter ipsos nervos; qui effectus horum, quales quales sint, primariò patiuntur, aliasque ad partes propagant, uti multiplicibus constat experimentis: hæc enim docent, quòd non modo in ipso puncto cui irritans applicatur, mutatio accidit; quin et ad nervi fontem, terminum, ramorum pullulantium fines derivatur effectus, nec non ad furculos, oppositam corporis plagam lustrantes, à causa licet diversa.

13. Effectus imprimis sunt, energiæ vitalis ad partem ita affectam accessio major, in aliis ejusdem diminutio; et perdita demum æquabilis leniisque ejus divisio, cursu magis accelerato, turbatoque simul. Hæc verò omnia, gradûs respectu, diversa futura sunt, et plus minusve conspicua, prout causæ lacessentis vehementia et copia, nervorum indoles, numerus atque moles, tegminis denique quo involuti sunt crassities, est diversa.

14. Causam

14. Causam hanc, sive energiam, § 13. esse liquidum subtilissimum, mobilissimum, omnibusque fluidi dotibus communibus præditum, è cerebro, jugi, leni, pacato motu derivatum in singulas corporis partes, agnoscunt plerique Doctores. Nec inficias ibit, qui attentè perlegerit quæ de hac re scripsit *(a)* Boerhaavius; vel quæ ordine adhuc lucidiore exposuit inclytus noster Anatomiæ *(b)* professor, perpenderit.

15. Neque admodum verosimile videtur, effræno vel præcipiti quovis impetu spiritus animales unquam ita rapi, ut enormium tot effectuum causa sint, vel tot morborum essentiam constituant; hancve in motum proclivitatem ab ingenti quadam et præternaturali mobilitate oriri posse: Quippe quòd spirituum impetus à fortibus vitæ viribus solummodo pendeat; cum tamen in nullis frequentiùs occurrant morbi à systemate nervoso malè affecto nati, quàm in eis qui oppositâ potiuntur indole, laxis scil. debilibus, et quibus vitæ vires parum firmæ sunt. Legibus certe œconomiæ perquam videtur consentiens, liquidum hoc, nunc paulo celeriùs, nunc lentiùs moveri: sed tantum intersse discrimen inter summam velocitatem, pigritiamque summam, ut sola sit hæc morborum origo, haud facile conceditur. Spirituum inæqualis distributio tumultuum plurimorum, qui nervis vitio dantur, parens esse potest, omniaque ista phæno-

(a) Boerhavii Institutiones, § 275 ad 292.
(b) Monro's Anatomical Treatise of the Nerves.

mena,

mena, quæ morbos, nervosos dictos, comitari solent, longè facilius hoc filo duce panduntur; nec alia suadet musculorum actio.

16. Pungens quodcunque satis acre, nervo, ejusve propagini appositum, inæquabilem hanc dispersionem efficit, ut spasmi et convulsiones ad necem usque sævientes ostendunt. Peragit idem quoque compressio, in nervi cujuscunque insignioris ortum facta; aut obstructus, alia quavis de causa, spirituum per suos canales egressus, unde propinqui pleniori horum rivo lustrari debent. Hanc augent diathesin, vel minuunt summopere diversa fluidorum et solidorum ratio, quæ unicuique ætati convenit; tum et propria cuique temperies: quo etenim tenerior ætas, quo mollior habitus, eò, cæteris paribus, promptiùs irritantur nervi, vel comprimuntur. Sententiam confirmat experientia. Rarò enim opiparè pascentes pueros, quorum sanguis spiritibus dives, et insigni prædita mollitie cutis, inquinat contagium varioloſum, si modo venenum haud fuerit mitissimum, quin excitantur contractiones horrendæ: neque rarò supervenjunt insultus, epilepsiæ veræ prorsus æmuli. Nec semper ob egestatem liquidi vitalis, invadunt insultus hysterici, cum otiosas, et luxu solutas feminas adoriantur magis, quàm quibus sors anguſtior obvenit.

17. His idcirco ita positis, generalem hanc regulam licet statuere; nempe si morbus à stimulo particulari cuivis parti applicato nascatur, huic succurrendum est, vel destructione causæ stimulantis,

ſtimulantis, vel alterius applicatione parti adverſæ; ſic etenim reſtituto æquilibrio ſolvitur morbus ſpaſmodicus.

18. Effectus memorati § 13. nervis præcipuè et muſculis contingunt. Alii tamen et diverſi vicinas ſæpe partes corripiunt, uti dolor, cutis rubedo, calor; humorum affluxus, tumor; vaſorum compreſſio, obſtructio; horumque deſtructio, ſuppuratio, gangræna. Hæc internis juxta et externis corporis partibus eveniunt.

19. Generales aculeorum virtutes hactenus enarratas poſſidet remedium de quo nunc agitur. Hoc tamen ſibi ferè proprium obtinet, quod emeticorum actioni certiores plerumque limites præſcribere liceat, quàm interno cuivis ſtimulanti remedio. Hæc enim quandoque frangunt repagula, ſæviuntque ferociùs quàm expedit, vel ſegniùs agunt; dum emetici vis ad votum ferè evehi vel reprimi poteſt, ſi atrociſſima tantummodo excipias venena.

20. Ex dictis [§ 13. ad 20.] patet quid valeat emeticum quatenus eſt ſtimulus. Inſignes equidem præſtat effectus, è quibus eminent ſequentes. Lenior apoplexiæ ſpecies, quæ ab inerti frigidâque pituitâ naſcitur, ſi modo à cauſa recente, nec corpore valde ſenili accidat, emetico prudenter exhibito ſæpe ſolvitur: inde ſiquidem craſſa ſubiguntur, excutiuntur; aperiuntur nervorum oſcula, horum tramites expediuntur, incitato ſimul torpeſcentis ſanguinis motu. Similes in ſimili paralyſi præſtat effectus.

Pueris frequens eſt morbus epilepſia, ab acri quovis

quovis rodente nervos, eosque vellicante. Adultis sæpe contingit ab eâdem causâ, tum et affectionibus animi gravioribus, à dolore sævo membra cruciante, à turbato spirituum fluxu, qualis hypochondriacis et hystericis familiaris est. In his casibus, si mobilis sit mali fomes, iterato vomitorio excutitur.

Membrana ista musculosa, quæ tracheæ segmenta cartilaginea sibi invicem adnectit, ex fibris conflatur musculosis contractilibus spasmo obnoxiis, in his præcipuè quibus genus nerveum est mobile nimis. Nictu oculi sæpe constringuntur fibræ, adducuntur sibi mutuò cartilagines, pertinaciter elongationi solitæ repugnant, crebros trahit spiritus æger, avidè captat auras, profundè gemit, tandem labore fatigatus, et mox angori succubiturus, præ defectu spirituum solutum sentit spasmum, explicatur pectus, et vivere de novo miser exorditur. Quid prohibet quin subitò propinata dosis salis vitrioli, cupri, hujusve tincturæ, quæ irritando ventriculum, ciendo vomitum, spirituum iter tramitemque mutando, tumultus hosce sedet? omni certe vacat periculo.

Ubi sanguis eam nanciscì indolem incipit, quæ apud veteres *atra bilis* dicta est, ubi functiones naturales labascunt propter spirituum absentiam; quando quosdam tantummodo nervos iniquè petunt, hi certos duntaxat mentis corporisve actiones exercent; vix præstantius exhibetur remedium, quam emeticum certis cautelis moderatum, ut postea dicendi erit occasio.

In

In morbis spasmodicis, aliisque plurimis nervosi ordinis, qui proventum ab inertiâ et languore chylopoieticῶn, ducere videntur, plurimum prodesse visa sunt emetica. Chorea Viti, malum certè paucis hujusmodi pertinaciâ secundum, vires tamen hujus remedii (*a*) quandoque fatetur. Atque licet solâ vi stimulante in his morbis non juvent, eâ tamen plurimum prosunt, spirituum auctiorem fluxum versus organa sollicitando, quæ penuriam patiuntur, quæque exinde deveniunt morbis opportuna.

In malis denique plerisque chronicis, quum pituita crassa desesque habitum obtundit, ignaviùs hâc obsita vibrant solida, fluida jam viscida difficiliùs propelluntur, perditæ vel depravatæ facultates universæ liquidi vitalis inopiam segnitiemve demonstrant, uti in glutine vel acore spontaneo; emetica, licet curationem haud absolvant quà stimuli, aliis tamen remediis palmam præripiunt; præsertim si ad reliquos vomitorii effectus respiciamus.

21. Actionis istius § 18. alter effectus est, fluidorum tenuiorum festinata secretio; quæ duplici ratione comparat Ἐρέθισμα; primò, motum sanguinis intendit in vasis majoribus, horum crebriorem et fortiorem in fluida reactionem excitando, attenuationem conciliando, et hinc secessui aptitudinem; dein ipsis secretionis organis præparationem expedit, et transitum humorum accelerat. Hinc ab eodem stimulo diversæ au-

(*a*) Cheyne's Essay on the Gout, p. 113. Edit. 4.

gentur secretiones, prout diversimodè in hoc vel illud organum secretorium determinatur.

PARS TERTIA.

De Emeticorum Usu, evacuando producto.

22. EMETI effectus, quatenus evacuat, in duplicem ordinem partiri absonum haud videtur, 1 *mus* est, Depletio ventriculi, contentis sursum rejectis. 2 *dus*, Aliarum partium excretio aucta per conatus vomendi. Quum verò hæc pro causa proxima haud agnoscat vomitorium, inter effectus quos mechanicè præstat emesis commodè magis recitari potest, atque evacuatio universalis appellari meretur: altera particularis, sive eorum expulsio, quæ jam in ventre stabulantur, vel eousque per aculei vim pelliciuntur; vel denique per ἀναδρομὴν à viciniis in eum advehuntur; de quâ proximè sermonem instituere jubet bona methodus.

23. Nocentia per os ingesta, aut in ventriculum aliunde delata, promptam emetici medelam exigunt, neque ullum novit medicina potentius adjumentum, ad prolem horum morbosam radicitùs exstirpandam, vel ad symptomata quædam atrocia, sata hinc, lenienda.

24. Ex priorum numero, § 23. ex ingestis scilicet, cibi potusque in censum meritò vocantur. Sors enim vitæ inclu&tabilis, quamdiu vitales auras carpimus, hos effecit necessarios; rationes supprimo. Et materiei diversissimæ indoles,

indoles, ex quâ comparantur alimenta, et à nostrâ sæpissime aliena, quorundam incuria, improba aliorum ventris ingluvies, denique vetiti aut nocivi appetitus, error in escarum potuumque delectu, et mensuræ justo moderamine, vitia induxerunt ventriculo multiplicia. Hinc ferax malorum progenies, stomacho ipsi crudeles minitans dolores, ultimisque vasorum anfractibus nocitura. Quæ sane singulatim explicare jubet inceptum, denegant autem temporis angusti limites. Et quidem eis excutiendis operam frustra navarem; quum pensum istud omni numero absolutum, vestris sub auspiciis, non ita pridem, in lucem prodiit, in dissertatione *(a)* eleganti, *de noxis ex cibi potûsque usu & abusu oriundis.*

25. Copia ingestorum major justo mala parit ibi descripta: his levamen afferre solet depletio; quæ, si æger sit εὐεμὴς, vomitoriis facienda; hâc enim ratione citissimè aufertur materies ventriculum gravans, et præcavetur ne incocti alimenti reliquiarum pars quævis in corporis interiora ducatur.

Vitiata qualitas idem petit auxilium, dum adhuc in cavo ventriculi remanet materia nociva, aut non longè ab eo propagatur. Sic, quæ nativâ gaudent tenacitate, majore quàm quæ domabilis sit per corporis vires, suum secuta genium corrumpuntur, abeuntque in ductile phlegma. Eadem res est, si expultrix ventriculi facultas præpedita sit, ut in debilibus sæpe fieri testantur

(a) Autore Henrico Tong.

practici: tunc enim, licet nec copiâ nec qualitate insigniter vitiabili gaudeant, sponte tamen labem contrahunt ingesta, natam ab ipsâ morâ auctamque. Hinc prodeunt acrimoniæ diversæ species; hinc muci et pituitæ tenacis scaturigo: quæ prout singulatim dominantur, vel conjunctim permiscentur, adjuvante hominis temperie huic illive proclivi, producunt diversa et nonnunquam planè atrocia symptomata. Sic multiplices appetitûs depravationes, deletio integra, imminutio vel excessus ingens; sic vitiata, imminuta vel sublata coctio vel incocti corruptio, hæc sæpe pro suis causis proximis agnoscunt.

Ex ægroto ipso facilè discendum erit quid prægressum fuerit prædisponens; atque hinc patet indoles materiæ, et quibus utendum remediis. Vomitoria fomitem exhauriunt, causam proximam funditûs eradicant: hisce tamen solis non fidendum, sed exhibitis roborantibus (inter hæc repetito, post debita intervalla, vomitu) imâ de stirpe tandem morbus reciditur.

26. Substantiæ quæcunque acres, casu vel industriâ in ventrem acceptæ, vel medicamenti, vel veneni titulo, si molestia denunciet fabricæ noxam insidiari, citissimè sunt expellendæ, et per ea loca præcipuè, quæ portam dant maximè periculis immunem, quâ emigret hostis, intactâ aliarum partium salute. Si nullâ aut parvâ copiâ tubum intestinalem ingressæ sunt, emeticum cæteris remediis longè præstantius, et curationem sæpe absolvit; neque erit omittendum, etiamsi

etiamsi portiuncula tantummodo hæreat adhuc in ventriculo. Classis prima § 7. amplam præbet pharmaciam, quâ plurimæ venenorum species debellantur et expelluntur; atque si antidoton universale sit, aqua tepefacta copiosè ingesta, id forte suppeditat. In delectu tamen horum prudentiâ opus est; expulsio quandoque haud implet vota, quin teneræ partes quibus applicantur, ab istorum injuriis tuendæ, mitigandi dolores, & veneni sævities compescenda, etiam dum citam molimur ejectionem. Hîc iterum assumpti natura cognita medenti auxilia indigitat, ad infelicis ægri levamen tempestivum procurandum. Sic salia alcalica diluta toxicis opponuntur acidis; saponacea misturam conciliant oleosis; aquosa sales quoscunque dividunt, sternuntque vires; acria retundunt ea, quæ oleo vel glutine viscoso gaudent; et sic de cæteris existimandum. Consulat lector quæ de hâc re egregiè scripsit *(a)* Boerhaavius in capitulo *de antidotis*.

27. Neque tantum per emetica fit ingestorum evacuatio, sed et humorum omnium qui in ventriculum deferuntur. Proveniunt illi, vel à vasis ipsius ventriculi, vel vicinorum: atque equidem nullibi clariùs conspiciendus pungentium effectus, § 21 expositus, quàm in hoc viscere. Id patebit, si attendamus ad nervorum per tunicas ampli ventriculi disperforum frequentiam, ad glandularum numerum, earumque munus, ad ca-

(a) Institutiones medicæ, § 1119.

pacitatem denique vasorum quibus hoc viscus instruitur, molis respectu. Mollities tunicarum facilem dat nervulis introitum, cavitas spatiosa latam exhibet superficiem. Hinc nascitur insignior actio, sive gastrici liquoris uberior secretio; quæ, quum semper larga sit, si augeatur, necessariò totum corpus quodammodo mutat, humores serosos dispellendo, exsiccando: et hinc alii emeticorum effectus pulchri, in morbis à serosâ vapidâque colluvie natis; ut in catarrho, leucophlegmatiâ, diabete, et fœdo isto morbo, virginibus exsecrato, qui ab excretorum colore pallente nomen accipit; aliisque hujusmodi, de quibus in sequentibus fusiùs dicendum.

28. Finitima ventriculo sunt hepar atque pancreas. Utraque sua secreta fluida in ejus cavum quandoque immittunt; quæ vel copiâ, vel acrimoniâ, vel utrâque chylopoiesin temerare possunt: bilis sæpius, rarius succus pancreaticus, morbos excitandi reus incusatur. Bilem culpabant veteres, ac si morborum sævissimorum parens esset: hanc sententiam multi inter hodiernos improbant, neque bilem esse malorum causam adeò frequentem contendunt. Si verò probè patuisset his quid per bilem antiqui voluerint, saltem ex iis sagaciores haud temere abjicienda fuisse eorum dogmata forsan judicassent. Non enim solus ille liquor ab hepate, ejusque vesicâ suppeditatus, *Bilis* titulo insignitus fuit; sed totius sanguinis molis pars haud aspernabilis, et ipsissima illa quæ recentiores *oleum* vulgò appellant; quod, ut ex chemiâ discimus, æquè fertilis

morborum

morborum stirps hodie exiſtit, ac fuit olim ſub nomine celebri *Bilis flavæ*. Verùm hîc agitur de bile veſicularîâ et hepaticâ, in ventriculum ſurſum propulſâ, vel de liquore alio quovis, ibi advenâ, qui ſimilia parit incommoda ac ipſa bilis; et talis eſt humor oleoſus, interdum vomitu rejectus, flaveſcens, horrendâ dotatus amaritie, nec unquam penè obliviſcendo ſapore, bilem ferè referens, ſi ſolùm excipias quòd bilis in igne ardeat nunquam, hic autem inſtar olei ſinceri flammam concipiat, ſi in ignitos carbones evomatur. Naſcitur ab oleoſis ingeſtis, loci calore mutatis in illuviem hanc ingratiſſimam, accedente gulâ nimis inſatiabili, ut monet Horatius,

Nempe inamareſcunt epulæ ſine fine petitæ;
Illuſique pedes vitioſum ferre recuſant
Corpus. ---------

Et vera bilis, atque flaveſcens illuvies ejus æmula, ſimiliter hâc dote gaudent, quòd ſc. ſtagnatio, in loco calido, acriores et magis horrendas utraſque facit: eâdem penè ratione ac oleum quodcunque tepore leni et diuturno fotum, à ſapore, blandiſſimo, odore non inſigni, colore ſubflaveſcente, tranſit per diverſos corruptelæ gradus ad ſummum uſque putredinis faſtigium, tandemque maximam guſtui acredinem induit, exhalat mephitim olidiſſimam, et nigredine deformi ferit oculos. Similia planè patitur utraque mox ſupra deſcripta bilis, iiſdem ſubjecta legibus, ubicunque in corpore congeſta, donec ſuam promovet expulſionem irrequietus hoſpes.

Aliter enim diris et acerbis doloribus, torminibus, nauseis atque vomitibus, pœnam non finientibus, sed ad mortem usque vexantibus, excruciatur miserandus æger; præsertim si temperies hominis calidior, solis ardor, victus denique rancescens, aut fermentescens, pabulum flammamque præbuerint. En cholera! morborum teterrimus: febris accenditur, inflammantur viscera, laboribus succumbunt prostratæ vires, et nisi assideat lecto Sydenhamus alter, obrepens in viscera gangræna duros cum vita terminat labores. Intra confinia, quæ emetici vim sustinent, materies sedem habet, quæ causa morbi est. Indicatur ablatio causæ; cur non emeticis, aut deorsum purgantibus, vel utrisque tentatur egestio, cum in primis viis adhuc stabuletur? Haud sanè immeritò, in tantâ morbi feritate, horum usum repudiant medici prudentes: nam utcunque fructûs perplurimum in aliis, vel in inferiore ejusdem morbi gradu, præstat hoc vel istud medicamen; in violentâ tamen cholerâ, loris quam stimulis magis utendum est, ut facilè attendenti patebit. Acer enim et inflammans iste liquor, abraso priùs omni muco gastrico, et, quousque pertigerat, intestinali, nudis applicatur nervis, sævos excitat dolores, spasmos fortes, pertinaces, febresque adurentes incendit; vomitu perpetuo evocatur mucus superstes, causa provehitur, et continuato emetici impetu, reduplicantur effectus horrendi. Licet etenim minimo polleat aculeo, hic tamen, qualis qualis est, hosti indigenæ addit vires, stimulus stimulo committitur, et horum

rum sociato nixu perit æger. Si ad hoc stadium morbus non attigerit, neque spem occidunt mali ominis symptomata, ut curationem vomitoriis tentemus jubent omnia. Rei cardo est delectus medicamenti peritus. Nec bilis, nec oleosa materies, sive bilis altera, omni fluido promiscuè unitur; hoc respuit, illud verò sequitur petitque. Quòd itaque ad misturam parandam maximè idoneum est, istud usurpandum; indolis morbi cognitæ habitâ interim ratione, cui semper opponi debet auxilium. Hinc saccharata, mellita, saponacea acescentibus permista, ea omnia quoque § 7. *n.* 1. recensita, quæ mole suâ plusquam erethismate quovis agunt, præ cæteris conferre videntur.

" Quandocunque bilis vacuanda est, inquit " *(a)* Forestus, post jusculà multa, vel post po- " tationem liberalem, provocandus est vomitus; " nam bilis ut oleum his supernatat, et ob id " facilius evacuatur: adde quod acrimonia ejus " temperetur mixtione harum potionum." Norma certè in vomitionibus biliosis sanandis nunquam non observanda; neglecta quippe pessima quandoque profert incommoda. Catharticum temere ingestum corruptæ materiæ partem abripit ad inferiora, fortè et in sanguinem defert: hinc iterum novæ miseriæ.

29. Tanta liquoris pancreatici diluvies occurrit rarò, quæ solitaria morborum causa queat haberi, natos tamen augere potest: quum enim

(a) Foresti observ. lib. xviii. obs. 3.

in

in sanitate larga adeò sit ejus secretio, ut Brunneri experimenta docent, in morbis ex lymphâ redundante ortis, deveniet adhuc copiosior, hujusque per emeticum evacuatio serosam colluviem imminuet.

30. Febrium accessiones nauseâ & vomitu plerumque stipantur, aliisque symptomatibus, quæ ventriculum malè affici significant. Cautè tamen erit distinguendum, an ab ipso viscere, an ab ejus contentis, oriatur ægritudo: alia enim curatio ventriculo, cujus membranæ vexantur inflammatione, alia corruptis sordibus gravato, inflammatione libero, subministranda. Antiquioribus haud adeò perspectum fuisse videtur, hoc viscus morbis istiusmodi æquè esse obnoxium, ac aliud quodcunque; donec Fredericus Hoffmannus *(a)*, in suis exercitationibus, hoc malum sæpius obvenire docuit, quàm vulgò creditur. Signa posuit diagnostica, quibus scopulos latentes vitaret medicus, in quos facillimè alioquin impingeret incautus. Hæc omnia pro suo more, cum largo fœnore in libello *de cognoscendis & curandis morbis* exposuit Boerhaavius, nitidamque medendi methodum illi attexuit. Ab istarum commotionum, quæ in febris initio toties ventriculo superveniunt, veri fontis insciti, lites istæ sollicitæ inter practicos agitatæ, de emeticorum fructu in hisce tractandis enato, profluxerunt. Adversus horum utilitatem hi strenuè arguunt, effectuum exitialium adducunt testes, et fronte

(a) F. Hoffman. Dissertationum Decad. 1.

torvo

torvo vituperant usus. Alii succeſſus ſalutares ad ſidera tollunt, nec minus indubitatam hiſtoriarum fidem appellant, ad ſuas partes firmandas. Et quidem facilè liquet neutros à veritate penitùs aberrâſſe. Quantos etenim cruciatus induceret vomitorium ventriculo, cujus vaſa ſanguine craſſo turgent, et infarciuntur; cujus diſtracti nervi, leviſſimo contra ingeſta colliſu, atroces patiuntur dolores; cujus denique tunicæ diſtenſæ tumore, duritie, atque dolore, phlegmonem verum in corporis exteriori natum omnino referunt. Quantas itaque clades in hoc rerum ſitu editura eſt operatio cum tantâ violentiâ conjuncta? Sæpius autem vitia, ab incluſis contentiſque producta, moleſtiarum autores exiſtunt: tunc ſanè laude dignos præſtat effectus, et Hippocratem, Sydenhamum, et clariſſimos quoſque in arte viros, uſum eorum ſancientes habemus; nec non et ratio ſuffulta praxi idem effatur. *(a)* " Si vomitus, ait Sydenhamus, vel inanis aliqua " vomendi propenſio, interturbaverit ægrum, " medicamentum emeticum omnino præſcriben- " dum erit." " Namque, ut teſtatur *(b)* Hip- " pocrates, ſi quis homini vomenti aquam mul- " tam bibendam dare velit, ἐκκλυσθήσεται δι ἃ " ἐμέει σὺν τῷ ἐμέτῳ, αὐτῷ μὲν διὰ τὸ ἐμέειν ὁ ἔμετος " παύεται." Nec ſolum hoc commodum fœneratur, quinetiam et medico et ægrotanti per totum morbi decurſum quæſtui ingenti erit, uti ex

(a) Sydenham. de morbis acutis § 1. cap. 4.

(b) Hippocrates de Locis in homine, Claſ. 2dæ, p. 16. Edit. Mer.

Sydenhamo

Sydenhamo discimus. *(a)* " Sanè vomitorium " propinare, ubi istiusmodi prægressa est vo- " mendi proclivitas, adeò est necessarium, ut " nisi humor ille expellatur, in sentinam com- " plurium malorum difficilium sit abiturus, quæ " crucem figent medico toto durante medica- " tionis tempore, ægrumque in haud leve peri- " culum conjicient. Ex horum præcipuis et " maximè solitis est *Diarrhœa*, quæ ut plurimum " in deferveſcentia febris consequitur, quotiesc- " cunque emetica, quando ea suadebat indica- " tio, omissa fuere.---Porro etiam compertum " habebis, etiamsi proclivitas illa ad vomendum " jam pridem præterierit, diarrhœam tamen, " quamprimum vomitorium exhibueris, ple- " rumque cessaturam, dummodo emetico feren- " do pares fuerint ægri vires." Nec sane teterrimum rerum conspectum vir egregius delineavit; namque putrida hæc materies in ventriculo stagnando magis putrida evadit, perque bibula vasorum orificia, vacua jam per calorem et liquidi jacturam reddita, in sanguinem ducitur, sordibus malignis cruorem polluit, et febrem omni numero sæviorem reddit; quæ cuncta feliciter anticipata fuissent, si vomitorium, quamprimùm se patefecit hæcce propensio, fuisset exhibitum. De emeticorum delectu monitum hîc quoque repetendum erit, scil. quod ea eligamus, quæ sordibus abluendis aptissima, quæ harum indoli adversentur, eamque mutent vel corrigant; quæ denique diluentis vicem gerant,

(a) Sydenhamus ubi supra.

ſi forte (quòd pote eſt) portio aliqua in ſanguinem hauriatur. His intentionibus arrident claſſe 1 *ma*, § 7. memorata, cum nonnullis ex § 8. decerptis efficaciora reddita; oxymel ſcilliticum v. g. cum radice ipecacuanha; hauſto dein largâ manu oxymelite ſimplice, aliove liquore tenui, prout res nata ſit.

31. Dum de febribus agitur, cautelam fas eſt in memoriam revocare, quæ apud practicos pleroſque proſtat, nec præteriri debet; ſcil. quòd in omnibus morbis, ubi plethoram adeſſe, vel ad eam eſſe vergentem habitum, ſua ſigna demonſtrant, et ſimul ægri conditio vomitorium poſtulaverit, ſanguinis miſſio ſemper præmittenda eſt; ne fortaſſe illud ingens conamen, et tetanus momentaneus, vaſa diſtenſa rumpat; vel major ſaltem quam par eſt ſanguinis impetus ad ea loca feratur, in quibus reſiſtentia minus firma vi cedat illatæ; diſrupta vaſa ſua liquida fundant, et immediatè pereat ægrotus per apoplexiam, vel hæmoptoe, vel inſanabili inde phthiſi, pulmone labefactato, tandem trucidetur; aliiſve viſceribus pariter infractis è medio tollatur. Illa vomitio videtur optima quæ brevi poſt ſectam venam cietur; certiùs enim incommoda evitantur à plenitudine cæterùm oritura; certiùs ſimul inſequuntur emetici effectus ſalubres, præſertim ſi ex febrium genere ſit morbus, qui utrumque expetit auxilium. Depleta ſiquidem per v. ſ. vaſa, citò quandoque de novo turgent; vel ob ſanguinis rarefactionem, vel ejus auctam molem per largos potus, in quos ardor et ſitis ægrum impellunt,

pellunt, eadem nascuntur ac priùs incommoda: nec ante repetitam v. s. exhibere licet emeticum; quòd paucis post primam evacuationem horis tutò fuisset propinatum.

32. In febribus intermittentibus mirum quid exsequi videtur Παιδευσις εμέτε, quæ effectus quandoque exhibet æquè difficiles explicatu, ac ferè ipsius morbi natura. Licet enim illius sedes præcipua sit in extremis vasis sanguiferis, aut aliquando forte in nervis; humorum tamen evacuatio, qui in alvo colliguntur, haud minimi est momenti. Prostant siquidem exempla hominum, qui vomitu solo curati fuere; hocque vel spontaneo, à benignis naturæ auspiciis excitato, vel arte famulante inducto: dum interim sanguinis evacuatio, nisi in plethoricis, plerumque obsit, et grave medenti tædium pariat. At repetita prudenter emetica, corruptum in primis viis morbi fomitem sensim consumunt, subigunt, sanguinis fluxum accelerant; morbum denique vel tollunt, vel tutam expediunt febrifugo viam, quod cæteròquin vel morbi fomitem figeret magis, vel evacuatione, sursùm aut deorsùm excitatâ, proprias suas perderet vires.

33. Multiplices affectat natura vias, per quas domitam febrium materiem, aptatamque ut per portas arte casuve recludendas eliminet, iterumque sanum corpus reddat. Nunc per emunctoria certis excretionibus assueta, per salivam, vomitum, fecessum, sudores aut urinas eam ejicit: nunc autem ad alia minus idonea loca despumationes

tiones emittit. Tumores ad exteriora nati, aliaque similia hujusmodi sunt. *(a)* " *Quæ educere* " *oportet, quo maximè vergunt, eò ducito per loca* " *convenientia*," omnibus est regula bene nota. Si per salivam febrem judicatam fore constet, manus auxiliatrices eo sunt movendæ. In vomitu idem erit præstandum, si criticum eum esse novimus, vel à materiâ excitatum naturæ inimicâ; sedandum verò, si à ventriculo inflammato, et vomitus vomitu demulceri nequit. Eadem res est, si per alia quævis excretoria egredi tentet. Quò diutiùs enim in corpore sistitur cocta fluensque sanies, eò pejora creat incommoda. Triste, sed verum hujus rei præbet exemplum febris purulenta, quæ à resorpto tabo variolis sæpiùs supervenit, secundaria pleriſque nuncupata. Nec maligna minus est aliûs cujuscunque febris acutæ materies critica putrescens, quæ instantem exigit evacuationem. Præstò adsunt remedia, singulis evacuationibus promovendis destinata: hæc usurpanda prout viam monstraverit natura. Advertendum tantùm est, quòd uti materies morbi cocta per cutis spiracula difflatur, corruptâ labe usque adeo inquinata ut sanos sæpè polluat; similis tamen ad interiora ventriculi et intestini, per horum exhalantia vasa deponitur, cathartico nunc, nunc emetico feliciter auferenda; ne forsan, *(b)* " *Quæ per morbos post judicationem intus* " *relinquuntur, morborum reversiones faciant.* At-

(a) Hippocratis Aphor. § 1. Aph. 21.
(b) Idem. § ii. Aph. 12.

" que

" que suadet ea propter Celsus *(a)*, *Vomitum post* " *febrem eliciendum esse.*"

34. His numerosum morborum agmen liceat adjicere, qui bona et eximia multa ab hoc subsidio mutuantur. Pauci enim ex chronicis existunt, qui emeticorum ope non indigeant; sed eorum recensio particularis ultra metas protraheret orationem. Morbi enim plerique, puerilis ætatis affeclæ, diathesis rachitica, strumosa, saburra vermium fomes niduſque, victûs errores, atque similia, sæpe emeticis feliciter emendantur. Arthritis, hydrops, scorbuti stadium clementius, adultis infesta, quandoque lenimen ab evacuatione per superiora facta sentiunt; chlorosis et fluor albus molliori sexu, eadem sæpè poscunt auxilia. Catarrhus, diarrhœa, dysenteria, cœliaca affectio, morbusque omnis à serosa colluvie natus, vomitorii commodum agnoscunt. Vix opus est memorare, quantum ad grandævos annos comparandos conducant, idoneis intervallis exhibita. Hodie non desunt homines, qui veterum consilii memores, licet gulæ placendæ parum dediti, nec scopis indigentes ad reliquias crapularum auferendas, tanti æstimant vomitionem, ut bis terve per mensem contractas in stomacho sordes per superiora propellant. Illi, qui accuratam maximè vivendi normam servare studet, sæpius in potu victuque errare necesse est. Hinc seriùs ocyùsve culpa ingruit ventriculo, ibique formatur primò morbi futuri stamen: ægritudo sive nausea molesta interdum sentitur,

(a) Celsi medicina, lib. iii. cap. 7.

minuitur cibandi desiderium, aliaque imminent symptomata, varia pro genio causæ vitiique diverso. Plerique statim ad tincturas celebres plantis amaris aromaticis, spiritûs ardentis ope elicitas, confugiunt, istis confidunt, indulgent; donec horum sub jugum missi torrefactis et effœtis visceribus moriantur. Nullum quidem remedium novimus, quod tot tantaque eis polliceri videtur, qui ad cruditates generandas à vitæ genere sedentario proclives sunt; natum enim morbum aufert, causam proximam delet, eradicat, acorem eluendo quæ hanc plerumque constituit. Iis, itaque qui vitam studiosam degunt, vel quorum corporis affectus exercitationes motusque prohibent, qui denique artibus utuntur sellulariis, vel qui ob aliam quamcunque causam eisdem malis obnoxii vivunt, iis, inquam, crebrum emeticorum usum commendarem.

PARS ULTIMA.

De Emeticorum Usu, à mechlicâ suâ Virtute petendo.

35. TERTIUM adhuc supereſt quæsitum enodandum, quid sc. emetica prosint, quatenus vim exercent mechanicam, et virtute mechlicâ expugnant morbos? Quæ itaque partes afficiuntur, quid patiuntur, quæ in reliquis exinde mutationes producuntur, et in toto corpore contingunt, proximè scrutandum.

36. Contractis itaque [§. 1.] musculis abdominalibus et rigefactis, ferè instar columnæ istius osseæ, quæ posteriora tuetur, vi hujusmodi nullâ movendæ; compulso simul validè diaphragmate, cui inferiùs ossa pelvim constituentia immobilia opponuntur; omnimodo ventris infimi capacitas, angustatur, dum hinc atque hinc, super subterque, contenta ejus arctissimè constringuntur; nec punctum ferè in tota regione abdominali ingentis pressuræ expers reperitur; cujus vim admodum insignem esse testatur vehementia, quâ sursùm exploduntur ventris contenta: certa enim suadent experimenta, nullam inesse ventriculo potentiam contractilem, quæ ista possunt exhaurire; donec conspirans simul partium modò memoratarum compressio fortis evacuationem integram absolvat. Tantæ ergo violentiæ viscera subjecta mollia participes fiunt, unde insignes utilesque effectus exspectandi.

37. Antequam verò harum disquisitio instituatur, incolarum abdominalium actiones, methodo sequenti, generatim disponere haud alienum est; ut perspectis horum muneribus, faciliùs cernantur mutationes morbosæ, clariùsque pateseat quot quibusque modis in subsidium venire possit compressio vehemens, mechanica, alterna, in hæc viscera.

38. Horum munera præcipua sunt, 1*mo*, Ingestorum præparatio, ut naturæ egestatibus succurrendis nata sit materies. 2*do*, Hujus separatio, ut quæ refectioni apta sit ab ineptis amoveatur. 3*tio*, Ejusdem in sanguinem, per instrumenta

menta extra abdomen posita jam conversæ, ulterior elaboratio. 4*to*, Secretio liquorum vitæ usibus egregiè famulantium. 5*to*, Denique partium solidarum et fluidarum residui, effœti nunc facti, à nutritiis separatio et ejectio. 1*mo*, Officinam præparantem ventriculus et intestina tenuia præbent. 2*do*, Fluidiora à crassis segregant vasa lactea et absorbentia. 3*tio*, Sanguis ad arterias amplas meseraicas, cæterasque per ventrem dispersas, perpetuam patitur concussionem, compressionem reciprocam, propulsionem; quæ omnia, in splene præsertim, conspicua. 4*to*, Cruor ita subactus, per appropriatas portas, v. g. per hepar, pancreas, totamque glandularem catervam, ubique per infimum ventrem dispositam, perpetim emanat, indole et formâ mutatis, juxta determinatas organi cujusque naturæ leges. 5*to*, Ramenta crassiora, corrupta, et per tubum protrusa, tempestivè excernuntur: sanguinis pars tenuis et aquosa, detritis onusta salibus, oleisque nutritioni ineptis, per renes abit, constituitque urinam. Cuncta hæc officia, tempore eodem, et eodem auxilio promoventur; alternatâ scil. et constanti agitatione; quæ respirationis est comes assidua et necessaria. Patet enim, quòd si sisteretur motus abdominis, et lenis ista succussio cessaret, nulla vis adesset, quæ per tot tamque angustos tortuososque canales, ingenti interdum oneri subjectos (ut ii sunt, qui per inferiora repunt) contenta in eis fluida propellere valeret: impetus quo vibrat cor, labori esset impar; et insignis

illa potestas, absorptio dicta, quâ fluida ex cavis intra venas hauriuntur, licet tanta ut nullis præscriptis finibus coërcenda sit, citò deficeret. Nam sponte nata visciditas, cessante motu externo, canales paulatim obturaret, atque in exilibus tubulis tot impedimenta deponeret, ut sensim in omnibus progressus brevi tolleretur, in quibusdam visceribus, vel in omnibus, prout malum proserpsisset latiùs, aut arctiora castra metâsset. Et quidem morborum Ætiologia demonstrat, plurimos ex eis, qui abdomini infensi sunt, ex hâc vel istâ, vel utrisque simul causis nasci. Remedium igitur attenuans, motumque properans, præ cæteris indicatur.

39. Nisu itaque vomitûs, viscerum superficies contra se mutuò validè comprimuntur, eorum moles imminuitur, compinguntur tranantia fluida, atteruntur, propelluntur; adversus canalium latera urgentur, et quà datur exitus confestim exprimuntur. Hinc secretio fit expeditior, celerior expulsio; crassi resolutio, ejusque subactio et ejectio; denique actionum omnium [§ 37.] muturatio, organis ipsis vigor, et, omnibus superatis obstaculis, agendi facilitas; ex quibus primariò pendent et quantitas et qualitas istarum secretionum, quæ sanitatis præsidia haberi possunt.

40. Interior ventriculi cavus conferto glandularum agmine vasisque exhalantibus obsidetur, ex quarum osculis, villosis, flexilibus, assiduò fluit humor, quo lubricus madidusque servatur

ipse,

ipse, defenduntur ab assumptorum injuriis nervi, promovetur chylopoiesis. Humorum verò crassities, sive indoles mucosa, qui hæc loca salutant, accedente motu languidiore (prioris plerumque comite) necessariò secretionem minuit tardatque; glandulas infarcit viscidis, sensimque munus earum evertit. Hinc gastrici fluoris penuria, cruditas inde et indigestio, appetitus deletus, aut nimius, stomachi ardor, aliquando nausea sitisque. Eadem quandoque occurrunt mala, ab arefactâ sordium crustâ cavitati ventris obductâ; sicuti post febrem acutam diuturnam, ubi vulgus adstans, aut medicus fortè crudelior, injustè naturæ poscenti ipsam lympham denegabant. Diluentia in hisce casibus haud sufficiunt; hæc enim ulteriùs laxant vasa; hinc tardiùs propulsa fluida cunctando brevi crassescunt, haud parvo labore iterum solvenda. His infortuniis istud remedium haud infimi usûs est, quod præstat effectus supra enarratos [§ 29.] Instar enim pulmonis alterius totum abdomen censendum est. Munera quidem sibi propria singula viscera nanciscuntur, sed motus supervenit aliunde, quo perpetua fluidorum in unoquoque mutatio inducitur, provehitur; perinde ac in pectore res agitur, mistio scil. compressio, attritio, solutio, atque similia: ejusdem causæ effectus idem, licet organis diversis absolvatur. Vomitu itaque citò perficitur, quod lentis vicibus consequi nitebatur, sed incassum, natura.

41. Alvus constricta, segnis, et solitariæ vitæ assueta comes, haud nascitur sæpius quàm à de-

ficiente muco inteſtinali, et liquoris gaſtrici, glandularum et vaſorum [§ 40.] ſobolis abſentiâ. Hic enim molles fluidaſque fæces reddere debet; ille verò lapſum facilem iis conciliare. Cauſa defectûs eadem, ac ſupra [§ 40.] memorata, et levamen eâdem medelâ, adſcito motûs et exercitationis auxilio, tentandum. Ab hoc ſolo fonte ſemper enaſci malum non aſſeritur; at verò ſi ab alio quocunque ſemel fuerit inceptum, augmentum exinde capit, et alvus ſegnis tandem aſtricta devenit. Fæces quidem educunt κάτω purgantia blanda, præſens auferunt incommodum, moleſtias iſtiuſmodi ſtatûs plerumque conſortes leniunt. Si verò remediis, quæ tam pulchra præ ſe ferunt, nimis indulgeat æger, quoties alvus obſtipata reducit ærumnas, ſecutura nocumenta vix evitabit. Talia ſunt, alvus adhuc aſtrictior, humiditate omni cum fæcibus eductâ, et viſcerum oppilationes, infarctiones à craſſo relicto. Duplici itaque de cauſa [§ 34, 40.] ſeſe commendat emeſis, hominibus iſtis, qui vitâ fruuntur inerti; quatenus ſcilicet et expellit cruda, et viſcidos attenuat liquores, accelerando motum, et proinde humectantis optimi vice fungendo.

42. Ventriculum et inteſtina gravat nonnunquam vitium priori oppoſitum; ſcilicet aquoſi laticis diluvium, quo ſubmerſa ilia fatiſcunt, calorem amittunt, et inſtrumenta muneri vitali dicata huic obeundo imparia fiunt. Gravitas et languor circa præcordia; ſputatio frequens; edendi cupido perexigua; aquoſæ colluvici ejec-

tio

tio per os, mane præsertim infesta; nausea gravis brevi desinens; sedes liquidæ, crebræ, doloris expertes, unà cum corporis universi debilitate, inertiâ, atque pallore hanc indicant illuviem, simulque serosam solutamque sanguinis indolem. Memorata symptomata correctionem haud obscurè innuunt. Expressio liquidi redundantis, et robur additum canaliculis primò necessaria sunt, tum secutura inde compacta sanguinis crasis, et mutata diathesis pituitosa: his imprimis conferunt emetica. Hinc itaque patet cur ventrem solutum vomitus comprimat, compressum solvat, juxta Hippocratis placitum *(a)*, Celso repetitum, ratumque.

43. Pancreatis structura et munus, salivalium glandularum æmula, illud objiciunt similibus malis, secretioni nempe impeditæ, vel nimiæ. Utrique prodest emeticum; obstructionem quippe, si non nimis pertinax sit, referat, exuberantem laticem potenter emungendo exsiccat.

44. Inferiùs paulò, ab osculis lacteorum exsuguntur liquefacta ingesta, quæ statim ad glandulas meseraicas feruntur. Tardus istorum motus, et vascula tam exilia et tortuosa tenuiorum à crassis separationem promovent, dum difficile reddunt chyli ad sanguinem iter; illis præcipuè qui debili stamine potiuntur, praviſque simul vescuntur escis; vel quibus harum partium structura mala contingit. Imprudens ætas, temperies sequax, et victûs crudioris malesuada fames,

(a) Celsi medicina, lib. i. cap. 3.

pueritiam, præ aliis vitæ stadiis, morbis ex infarctis et tumefactis glandulis meseraicis opportunam reddunt. Causæ similes in adultis similes edunt morbos, sed rariores; nam reipsâ constat puerulis hujusmodi infarctiones, glandulas abdominales occupantes, frequentiores devenire. Istis enim annis vix nobis occurrunt epulæ gratiores, quàm fructus crudi, immaturi, legumina et farinacea viscida, et, si magis indissolubiles pariat natura cibos, istis utimur imprimis, eos importunè petimus, eventûs luxuriosæ gulæ nullâ factâ ratione. Inde massa tenax in alvo formatur, quæ in fluorem viscidum, vix nisi formâ mutatum, tandem resolvitur, dilabitur è stomacho, occurrit bili inerti, eâ diluitur, vix tamen solvitur: tenuior pars abit in lactea, brevi præ tenacitate hæsura; quotidie renovatur causa, crescit augeturque obstructio, durior evadit tumor, vicina comprimit, aditum in venas claudit, atrophia nascitur, et homunculus indies marcescit. Vel, si ad tantam sævitiem morbus non attigerit, nec penitus obturentur glandulæ, imperfectus chylus sanguini affunditur, eumque labe contaminat; secreta, cruoris proles, vitiantur, affectis ubique ferè glandulis; eisque præcipuè tumefactis, quæ collum faciemque obsident: unde vultus fit prætumidus, torvus, et veram strumam, aut diathesin eò vergentem, adesse designat. Tetrica certe rerum facies hæc, et medenti nodus intortus; suum enim robur perdidere solida, justo viscidiùs fluida coguntur: hinc depravantur, et quæ assumptorum mutationem in corporis naturam ut

plurimum

plurimum debebant perficere, eam imperfectam relinquunt. Præterea, glandulis obturatis, præcluditur ipse meatus, per quem novas vires ad sanguinem mitti oportebat. Huc adde quòd semel oppilatæ glandularum cryptæ difficiliùs purgentur, et muneri suo minus aptæ reddantur: unde facile constat, ad morbum adeò pervicacem debellandum omni subsidii genere utendum esse. Tumorum resolutio imprimis tentanda, ut vitæ pabulum, depravatis medela, robur debilibus, quantum victu et remediis fieri possit, subministrentur. Deinde partium, in quibus mali sedes, ita firmanda crasis, ut gravantia liquida subigant, expellant; curatâ interim vivendi normâ. Qui situm mesenterii callet, intelligit facile, quantâ cum violentiâ, nisu vomitûs, illud undequaque prematur; et quinam inde futuri sint effectus in glandulas recens infarctas: in vicina fœdâ spurcitie cumulata [§ 39.] in pancreas eâdem scatens [§ 43.] in ventriculum denique, sursum evocando liquores acres [§ 34.] hunc infestantes, et novas subinde vires morbo suppeditantes. Sedulò autem perquirendum erit, si integra sint viscera, si nullo ulcere corrupta, si à labe putrescente penitus immunia; sin minus, imprudens emesis hominem lædet. Idem quoque verum est, si ex sola laxitate continui solutio metuatur: tunc enim virtus mechanica parciùs adhibenda est. Nil ferè aliud prohibet, nec magni fructûs spes erit inanis, dummodo mobilis sit obstipans

stipans materies, et repetita vomitoria commodè ferant ægri vires.

45. Inter cætera abdominalia splen viscus est tenerrimâ compage donatum, cujus columnæ carneæ, musculosæ, ad fluxilem firmandam fabricam, plus quàm ad insignem cruoris quam accipit copiam propellendam, aptatæ videntur; nec labori par est arteriæ robur, aut cordis impetus, per vasorum numerum, et anfractus tortuosus, retusus. His verò succurrit assidua et lenis agitatio, quam connexio splenis cum diaphragmate, musculorum abdominalium propinquitas, positio pendula, isti conciliant. Atque per has causas præcipuè sanguinis progressum per vasa lienalia conservari censendum est. Ideoque si motus assuetus sistatur, vel diu minuatur, (ut in eis fit, qui vitâ utuntur desides, et domi pactâ) cunctatur in cellulis cryptisque sanguis, evadit crassior, et maximo cum obstructionis periculo res agitur; quum debita mobilitas, et impetus assuetus, facilis liberique transfluxûs autores, cessant. Diversa morbi ætas, causa diversa varium postulant lenimen; nec una medendi ratio lienosis omnibus convenit. Si recens infarctio, nec ingens durities; si ab exercitationibus omissis, et ex acriore abhibitâ rei cuicunque curâ nascatur; si gravedo distensione dolens, nec copiosa materies, atque temperies εὔφορος quoad cætera, compressio mochlica cum fructu potest adhiberi. Si verò durities schirrum indicet tactu, aut si prægressa febris inflammatum lienem in puris

puris sacculum converterit, ad alia fugiendum remedia, ne schirrus irritatus in cancrum abeat; vel perruptis claustris, quibus pus coercetur, purulento diluvio submergatur abdomen, aut sordidâ tabe obruatur hepar.

46. Inter morbos, qui jecori infensi sunt, fœda ista, et luteo colore cutim inficiens aurigo, sæpissime sensibus se prodit. Causas hujus mali proximas in scriptis medicis plurimas invenimus; singulas autem enarrandi vel discutiendi laborem mihi minuit elegantis illius exercitationis autor, qui de ictero tractatulum *Tentaminum Med. vol.* 1*mo (a)* inseruit. Cæterùm cum egregio viro, qui nomen suum latere voluit, censere licet, longè frequentissimas icteri causas calculos esse, in vesicâ felleâ satos, per meatum tortilem ex eâ derivatos, et limine nimis angusto hærentes. Nam præter historias, quas ipse auctor adducit, ratiocinia ejus plurimum stabilire videtur alia, *(b)* quæ volumine sequente traditur. Si itaque hæc sit vera rerum facies, (ut maxime verosimile videtur) cæteris remediis mechanica sunt anteferenda: ambulatio, equitatio, aliique motus quibus fortiter jactatur corpus, in hunc censum vocantur, ut eorum ope lapillus ab angustiis extrudatur, et bilis repressa effundatur. Descensum sanè egregiè promovent auxilia recensita; sed deficiunt nonnunquam, et duriori cuneo morbus indiget. Si unquam profit emeti-

(a) Medical Essays, &c. Vol. 1. Article 33.
(b) Idem, Vol. 2. Article 28.

cum

cum virtute quâvis mechanicâ; unquamve ſperandi effectus hujus ſalubres; et morbi ſedes, et cauſæ genius, hîc mentem fructûs ſpe lactant, nec ſæpe inani. Hauſto enim copioſè liquore, turgidulus fotu tepefacto ſaccus, ipſi ferè ductui conſtricto apponitur, eumque laxat; dum urget à tergo bilis, ingenti contractione [§ 36.] protruſa. Aut ſi cauſas alibi ponamus, v. g. in porro biliario, in primo ejus exortu à portarum extremis, aut ubivis præterea, eaſque materiem craſſam, purulentam, vel hærentes lapillulos agnoſcimus; haud minimæ efficaciæ erit emeticum, ſi artis adjumento malum debellari poſſit.

47. Per ſympathiam, ob commune nervorum conſortium inter ventriculum atque renes, perque motus turbaſque in illo concitatos, quotieſcunque hi dolore afficiuntur, viam indigitâſſe videtur dux natura, quâ ſedibus excutiatur quicquid inimicum foret renibus diuturniore morâ. 1 *mo*, Gypſea, mucoſa, purulenta materies hîc nata, vel per metaſtaſin aliunde huc provecta, craſſior quàm quæ per exiles canalium fines exire poſſit, vel egreſſa diutius quàm fas eſt in ſinu renali ſtabulans, augmentum quotidie capit, mole creſcit, vicina premit, vel atterit, et cruciatûs atrociſſimi exiſtit auctor. Sæpe formatus jam calculus caſu in ureterem, hoſpiti tanto recipiendo nimis anguſtum, protruditur; cujus tunicæ muſculoſæ, ſenſiles, ſcabrâ lapilli ſuperficie raſæ, arctiùs hunc complectuntur, et ulteriori progreſſui fortiùs obſtant, ſævientibus interim doloribus omnem fere tolerantiam ſuperantibus. V. S. imprimis

primis celebratâ, universalibus et topicis strictura tollenda est; deinde vis mochlica præstat quod arte præstandum. Nec unica hæc est vomitorii virtus in hoc morbo, sed fomenti vicem gerit epotus liquor, qui cum injecto clysmate balneum internum faciunt, quod aquoso suo halitu relaxat contracturas, et, ventris infimi contenta adaugendo, in renes aut ureteres vim magis intendit.

2*do*, Morbosa renum flacciditas, infracto vasorum robore, tale nonnunquam emitti patitur aquosi laticis profluvium, ut speciem istius morbi simulet, qui Διαβήτης Græcis appellatur. Exit crebrò urinæ aquosæ, tenuis, decoloratæ, odoris saporisque pene expertis, copia spectabilis; sitis adest molesta, virium prostratio, fluidorum ingens dispendium, et solidorum detritio. Pejor morbi species ea est, in qua fit effluxus liquoris albicantis, chylosi, subdulcis, reliquisque stipata signis, quæ propria huic morbo dedit praxis vetustior, et comprobat hodierna. Licet enim morbus rarissimus, cernitur tamen aliquando. Sive jam natus sit à relaxatis renum vasis, sive à fluidorum dissoluta crasi, sive ex alia quacunque προφάσει, uti loquitur *(a)* Sydenhamus, "Curativæ indicationes, ad sanguinem corroborandum, invigorandum, ac pariter ad fluxum urinæ præternaturalem restringendum omnino dirigendæ sunt;" cui addere licet, ad morbosam renum laxitatem auferendam.

(a) Sydenhami Epist. Resp. oper. p. 272.

Quæ

Quæ de virtute emetici exsiccante supra [§ 42.] dicta sunt satis evincunt, quantum prioribus indicationibus hæc respondeant. Renum situs, ossibusque duris vicinitas, quid mochlicè ii patiantur ostendunt, et quam fortiter impetus humidum redundans ex ipsa renum substantiâ emungat. Sanè excutit quodammodo macerantem lympham, et amissum tonum fibris elatere suo privatis restituit.

48. Vix opus est monuisse, quàm immaniter uterum sarcinâ tumentem comprimant musculi [§ 36.] spasmo validissimo contracti. Propiùs igitur instante partûs exclusione, sedulò fugienda sunt quæcunque istis calcar addunt. Sed eandem ob causam videre est, quanta spes ab eodem fonte profluat, si parturienti deficiant vires et repetito conamine eousque robur prosternatur, ut quamvis situ legitimo potiatur infans, nec justam molem multò exsuperet, nec adeò arctetur exitus, quin par operi potentia partum produceret; emeticum, quod promptè, quod potentèr agat, quod citò coercendum, faustè sæpe rem peragit; nec tumultus, calores, aut incendia febrilia parit, quæ comites atque sequaces sibi adsciscunt aromata, et præsertim ardentes spiritus istis acuminati, et ejusmodi plura, quæ ab aniculis, suo more, in magnum plerumque ægræ incommodum affatim porriguntur.

Alii sunt uteri affectus, qui levamen ab eodem remedio capiunt: quum verò, licet ultimas sedes in hoc viscere posuerint, vitia tamen per totum corpus dispergunt, hæ tanquam effectûs generalis

causæ

causæ spectandæ. Fomes itaque in universo habitu delendus, priusquam utero redierit pristina salus. Quantum huic intentioni arrideat emeticum, postea dicendum.

Perspectis hoc pacto singulatim præcipuorum viscerum culpis, saltem quæ à remediis mochlicis commoda accipiunt, effectus qui totum corpus respiciunt perpendendi, et mutationes indagandæ, operationis tantæ progenies.

49. Præter insignes vasorum truncos, qui ventrem pervadunt, qui ad organa diversa sanguinem deportant, qui ab extremis referunt, quique in unum collecti portarum stirpem constituunt; milleni istorum surculi viscera perreptant, et variis ambagibus iter tentantes, plures formososque vasorum plexus constituunt; per quos assiduò propelluntur humores inquilini. Per vomitum vasorum situs, magnitudo et figura omni momento variantur, ita ut actio nata sit pulmonum actioni simillima. Si verò numerum vasorum abdominalium, et vim quæ eis eorumque contentis nisu vomitorio applicatur, in censum revoces, pulmonum vires, et actiones maxime potentes longè superari videas. Adde quòd hoc ipso temporis puncto, strenuius multo ab iis res geratur quàm solito more fit. Inferre itaque nil vetat uniuscujusque munus sanguificandi summoperè exinde provehi; id est, compactio, densatio, attritio, solutio, miscela cruori eximiè conciliantur. His quoque famulatur aucta sanguinis velocitas; comprimuntur enim arteriæ, et

quæ

quæ per ventrem vadunt, quæque etiam per artus dispertiuntur. Musculi enim plerique leviori tetano, dum nisus instat, horrescunt, ut cuivis patebit hominem evomentem spectanti. Musculi, qui pectus humerosque ambiunt, sustentant costas figuntque; exporrecta brachia suffulciunt corpus, quibus opitulantur illi musculi qui dorsum vestiunt, antrorsum curvatam spinam in situ commodissimo detinendo; crura rigescunt, et instar immobilis statuæ æger ore hiante vomitûs insultum exspectat. Vasa itaque sanguifera musculorum comites, æquè ac abdominalia, pressuræ subjiciuntur, et eadem pati debent: minuuntur arteriarum diametri; ruit ergo compressum fluidum quò patet exitus; recessum prohibet urgens ejusdem à tergo columna; progredi necesse est, ocyùs itaque venas appetit: harum tunicæ minùs rigidæ facilíùs vi cedunt externæ; idem itaque his accidit, comprimitur nempe pelliturque sanguis; valvulæ frequentes pedem revocare vetant, pergit ergo celeriùs et pleniori fluvio ad cor accedit; inde crebrò repetitis ictíbus perculsus, properè cursus iterat eosdem. Prædicta docent, nec obscurè; 1*mo*, Hæmatopoiesin emendari. 2*do*, Secretiones augeri. 3*tio*, Solida novis viribus instaurari. 4*to*, Denique sanguinis momentum intendi, et sepositis impedimentis circulo liberiori frui. Atque ex hisce principiis facilè patebit, quinam sint morbi τῆς μοχλείας δεόμενοι, et quare tot tantaque, tum in fluida, tum in solida, efficiat vomitorium: in

paucis tamen ejusmodi morbis horum usus perstringere haud à proposito alienum erit.

50. Præteritâ jam hyeme, solida, acri gelu priùs rigescentia, laxantur iterum, atque fluida, ab enervatis vasis minore impetu propulsa, verno tepore spissescunt, et levi de causâ in extremis vasculis sistuntur, deficiente quoque consueto solidorum robore; aëris humiditas sordes accumulat, et corpus debile, fæcibus gravatum, multis malis opportunum reddit. Inducit fortasse natura febrem benignam intermittentem, quæ molestum onus brevi excuteret, sanum vegetumque corpus daret, si sibi commissa ab opere non deturbaretur. Urget tamen querulus æger, dictis amaris medicum lacessit, et spreto consilio, fortè ab aniculis intempestivum morbi levamen, millenis sæpiùs malis stipatum, sibi comparat. Emeticum secundat naturæ ausus; et, si radicitùs haud exstirpet, tutam tamen expedit in sanitatem viam [§ 32.] etiam sæpiùs repetitum prodest. Febris intermittens autumnalis emetici subsidium haud minùs efflagitare videtur, tum ad amurcas ex primis viis exhauriendas, tum ad vitia, quorum radices altiùs hærent, corrigenda.

51. Febris lenta, continua, morbo priori affinis, gradu major, ab eisdem fortè causis, idem circa tempus, quandoque grassatur; immobilior videtur materies, quæque diuturno naturæ labore nullo modo subigi vel expelli possit: hinc nulla remissio; parum tamen mordax est, ergo haud impetu magno exardet. V. S. cum sanguine emittit vires, quæ in hâc febris specie fatiscunt

nimis; alvi subductio, si lenis, parum confert, si fortiùs res agatur, debilitat. Naturæ inceptis favere medici est; febri ergo flammæ subjiciendæ, ut irritos conatus absolvat, crassa subigat, et expellat subacta quò nocitura non sunt. " At si " frigus est et torpor, inquit Celsus *(a)*, et jac- " tatio corporis; non alienum est, in ipsâ febre, " dare mulsi tres aut quatuor cyathos, vel cum " cibo vinum benè dilutum. Intenditur enim " sæpè ex eo febris, et major ortus calor simul " et priora mala tollit, et spem remissionis, " inque eâ curationis, ostendit." Nec quidem minora ab emeticis efficiuntur. Adest nempe vis insignis spirituum motum accelerans [§ 18, 19.] evacuantur sordes in ventre latentes [§ 30.] viscida subiguntur, si quæ abdominis incolas obsideant [§ 39.] denique sanguinis intenditur cursus, et augentur secretiones [§ 49, *n.* 2, 3, 4.] tenues, per exteriora præsertim.

Neque ulla fortasse est methodus efficacior vel utilior, quâ sudor elici potest, quàm post exhibitum vomitorium; non modò enim in ipsâ operatione copiosus plerumque exprimitur, sed exteriora versus tam validè truduntur liquida attenuata [§ 49.] ut dimotis obstaculis, quæ orificia cutanea claudunt, effluant pleno rivo humores istuc determinati. Atque huc egregiè confert opiatum, quod post emeticum dari optimo consilio suadent practici. Vomitorium præterea evocat squallorem primas vias fœdantem, et præca-

(a) Celsi Medicina, lib. 3. cap. 5.

vet

vet ne exhibito hydrotico, eoque dispersо per corpus fomite, manus hostiles in viscera convertantur.

52. Eadem doctrina innuit quanti sit usûs emeticum in tenui acrique catarrho, in asthmate humorali, aliisque ejusmodi morbis à frigore correpto natis; quum sciz. retenta materies perspiranda, vasa eousque inerti fluido replet, ut functiones omnes pœnas luant; quum gravitate pigrâ sensus hebescant, et ad stateram ferè corporis pondus auctum esse diceres; distensa denique vasa doleant, partesque sensiles ægrè laceſſantur. Cum hæc et alia ejusmodi symptomata se produnt, remedium exhibendum est, quod portas reserare, liquores superfluos expellere, atque solitam agendi facilitatem corpori restituere possit. Haud parùm his confert emesis; et quâcunque corporis parte ægritudo suas sedes posuerit his causis orta, multùm valere possit. Ponamus glandulas, cæteraque vasa circa fauces et collum, tantâ scatere aquarum copiâ, ut defluxionem brevi adfore indicent signa, vis mochlica sæpe salutaris est. Rubens etenim tumensque facies, oculi scintillantes lachrymis suffusi, liquore suo madefacti nares, et salivæ mucique rivulum fundentes oris fauciumque lacunæ glanduloſæ, conatûs emetici nunquam non comites, liquidò demonstrant quantâ cum vi appetat has oras sanguis, et quantus in vascula obstipata impetus sit: dum canales ossei cedere nescii, et insignes vertebralium et carotidum internarum arcus et ascensûs obliquitas cruoris ad ce-

rebri appulsum valdè retundunt: fluxilis ergo hujus compages minus periclitatur, impetu ut plurimùm extrorsum determinato; parùm tamen introrsum vis aucta devenit. Et partim fortè hinc, partim à virtute stimulante et evacuante, ratio patebit cur in vertigine, hemicraniâ aliisque similibus, vomitus tanti sit usûs; cur in epilepsiâ quandoque in senibus adeò profuerit, ut fatentur observatorum scripta; "Inveteratam epilep-" siam, quæ etiam per xx annos ægrum traxit, " curatam novi, inquit Hoffmannus *(a)*, ab " emeticorum usu et specificis antiepilepticis ex " animali regno petitis." Nec mihi desunt historiæ similes, at referre prohibent limites præscripti.

53. Impedit eadem ratio, quò minùs horum usus in variolis distinctè enarretur; non modò quatenus evacuant, et avertunt alioqui futura mala [§ 30.] sed ob alios etiam quibus potiuntur effectus [§ 49.] et eximias inde manantes mutationes. Pustulis refertam esse cutim ponamus, vascula perspiratoria ita compressa ut coactam materiem vis solita nequeat protrudere: hoc in casu contentorum moles augetur; calor febrilis ita ad interiora exæstuat, ut organa intus exhalantia adeò arefacta, vel alioquin obstipata evadant, ut suum munus exsequi non possint. Ex utrâque parte cohibetur idcirco fluidum, quod diuturnum nimis circuitum jam patitur, quodque longiore morâ pessima mala pariturum est.

(a) Hoffmanni dissertat. Decad. 1. p. 204.

Calor enim nimius acrimoniam gignit, unde ſtimulus partibus nervoſis: hinc iterum febrilis æſtus ſitiſque, fortaſſe delirium, huic ſupervenit; ab auctâ fluidorum mole anxietas præcordia infeſtat: quum interim calore craſſiora deveniunt fluida, coagulantur, et inepta magis redduntur ad exitum ſibi aperiendum per ea loca quæ ſæpè indigitat natura, ſciz. per fauces vel inteſtina. Exigunt hæc mala coagulati in vaſis exhalantibus utriuſque loci reſolutionem, evacuationem, reliquiſque conciliatam fluiditatem, nec auctâ interim febre pluſquam per lene opiatum tutò coerceri queat. Qui prædicta [§ 13, 18, 39, 49.] de emeticorum effectibus, tum in fluida, tum in ſolida, in mentem revocaverit, hæc non inepta eſſe auxilia, imò aptiſſima forſan prædicabit. De febribus acutis agens Sydenhamus hæc profert. *(a)* " Sæpe miratus ſum, inquit, dum " fortè materiem vomitu rejectam aliquando " curioſè contemplabar, eamque neque mole " valdè ſpectabilem, nec pravis qualitatibus in" ſignem, quî factum fuerit, ut ægri tantum le" vaminis exinde ſenſerint; nempe vomitu per" acto ſæva illa ſymptomata (nauſea v. g. anxi" etas, jactationes, ſuſpiria luctuoſa, linguæ ni" gredo, &c.) quæ et ipſos excruciarant, et ad" ſtantes perterrefacerent, mitigari ſolent ac ſol" vi, quodque morbi reliquum eſt εὐθύμως tole" rari." Quum verò ex antea dictis pateat, fluida craſſa ſolvi, canales obturatos reddi trana-

(a) Sydenhami Op. ſect. 1. cap. 4.

biles, totum corpus arefactum humectari, simulque nociva expelli, mirandum non est levamen tam subitum inde evenire.

54. Beneficiis sic cursim enarratis, quæ ab emeticis lucrantur morbi acutiores, via sternitur ad alios, in quibus occasio minùs præceps, nec adeò fallax experientia, licet judicium satis difficile. Vomitoria certè isti morborum cohorti præcipuè adversari videntur, qui vel in ipso ventriculo, vel in visceribus propè sitis ortum sedemque obtinent, et hujusmodi omnes ferè morbi chronici sunt. Vitia enim hinc nata longè latèque brevi dispertiuntur, iterumque effectus temeratæ salutis ad hæc loca revertuntur. Hoc nullibi clariùs conspicitur, quàm in eis morbis, qui cum mentis alienatione junguntur, quique à pravo victu, vel in eo assumendo errore, ut à causâ proximâ eveniunt. Licet enim ab animi pathematibus, ab evacuationibus, aliisve causis remotioribus enascantur, victûs tamen inepta ratio sæpè constituit propiorem. Innumeri nervorum surculi ad ventriculum emissi, neque ad ipsius nutritionem, neque ad motum quemlibet provehendum tantummodò comparati sunt, sed potiùs ad chylificandi operam adjuvandam. Dispersis itaque nimiâ copiâ spiritibus, perditur ex causis sanitatis una; assuetæ scil. ciborum mensuræ, in nostri naturam mutandæ, imparia deveniunt instrumenta: assueta tamen mensura assumitur, et dum cætera æqualia non sunt, necessariò enascitur indigestio, et inde alia mala. Hæc origo sæpissimè est affectionis hypochon-

driacæ, et reliquorum quandoque graduum mentis læſæ, à vacillatione leviſſimâ ad ſummam uſque inſaniam. Docent phænomena hujus morbi in fluidis præ primis hærere culpam, hancque eſſe nimiam craſſitiem, ſive partium mobiliſſimarum difflationem: hæ ſunt ſpiritus animales, halitus cruoris vaporoſi, et aquea dein ejus elementa, quorum minus majuſve diſpendium morbum efficit leniorem vel graviorem, dum ſanguis per varios ſpiſſitudinis gradus tranſit, donec in veram bilem, à veteribus atram dictam, degeneret. Quodcunque de hujus morbi naturâ cognitum habemus, præceptis chemicis ut plurimùm acceptum referendum eſt, quorum ope hîc, uti etiam in aliis benè multis, plurima phænomena, alioquin abdita prorſus, deteguntur. Ex chemicâ ſanguinis ànalyſi conſtat, difflatis aquoſis ſupereſſe ſalina, oleoſa, terreſtria, diverſimodè conjuncta, ſanitatis muneribus parùm apta, utpote quæ craſſiora et leviora ſanguine ſano. Eadem etiam chemia fidis experimentis demonſtrat, oleum, ſalem, terramque unita, plus aëris in ſe continere, quàm aquam reliquis conjunctam. Hujus teſtis ſit calculus humanus. Ergo ſolida præpollent fluidis, ocyus hæc circumaguntur, et augetur tenuioris diſpendium, dum craſſeſcens reſiduum intimam cum diluentibus admiſtionem reſpuit. Ingeſta haud ſatis ſubacta morbo addunt, viſcera molliora obſtipant, actionem minuunt tolluntve: hincque ſplenis, hepatis, hypochondriorum oppilationes, tumores,

dolores. Sanatio requirit viscido restitutionem fluoris et miscibilitatis. Hæc fiunt per diluentia, saponacea et attritum. Diluentia sola parùm valere ostendit exposita morbi natura: sola saponacea, efficaciora licet, rarò sufficiunt; adjuvantibus verò attritu et calore omnem quam possident vim exerunt, docente chemiâ. Denique attritus in hoc morbo rarò per stimulantia vulgaria intenditur, quin hæc sæpè nociva comperta sint. Inde quidem augetur sanguinis celeritas, sed simul augetur ejusdem rarefactio. Compertum autem est attritum esse in ratione celeritatis, soliditatis, et compressionis. Si itaque auctæ rarefactionis ratio superet rationem auctæ celeritatis, inde non modò non augebitur attritus, sed, è contrario, minuetur. Postulatur itaque remedium quod sanguinis celeritatem intendat, rarescentiam cohibeat. Tale, in nisu vomitûs, reperiri, facilè ex prægressis liquet. Hinc obiter patet utilitas submersionis in aquâ frigidâ.

55. Huic morbo ex diametro opponi videtur hydrops, in quo lympha serosa viscera submergit, et pallescens sanguis corpus deturpat ingrato colore, docetque aquam exuberare, et vitio diverso, oleum, terram, salemque deficere.

Dispositione pituitosâ in fluidis subortâ (quæ à multiplici causâ fit, quarum aliquas haud inconcinnè memorat Poeta *(a)*,

(a) Sammonicus.

Corrupti

Corrupti jecoris vitio vel splenis, acerbus
Crescit hydrops: aut cum siccatæ febre medullæ
Atque avidæ fauces gelidum traxêre liquorem:
Tum lympha intercus vitio glisciente tumescit,
Secernens miseram proprio de viscere pellem.)

statim ita debilitantur solida, ut torpidos liquores vix propellere possint. Hinc stagnatio in lateralibus vasis, et functionum languor. Indies accumulatur serum, turget, propinqua lædit, et perpetuò renovantur morbi causæ. Si contingat hæc in unico vase, hydatis formatur; si κατὰ φλέβας, seu per tunicam cellularem per omne corpus dispersam, fit leucophlegmatia; si ruptum vas effundat contenta in cavum quodcunque, localis hydrops suboritur: si denique (quod sæpissimè in causâ est) actio venarum absorbentium debilitetur, sive ab obstructione in eis natâ, sive à mero languore et inertiâ solidorum; dum suo munere funguntur arteriolæ inhiantes, et squallentem laticem sine fine in cavitatem eructant: hîc continuò accumulatus spissescit, vasa omnigena brevi effœta reddit, et hydropem topicum producit. In hoc morbo curando primaria morbi causa minuenda vel adimenda est; attenuantia, evacuantia, exsiccantia, roborantia uniuscujusque ordinis usurpanda; ut tandem amoveatur onus humidum, minuatur latex, et vasa eòusque viribus instaurentur, ut officio debito fungantur, et fluidorum nativa bonitas redintegretur. Hisce omnibus absolvendis dicata plurima apud practicos remedia invenimus. Nescio quot specifica celebria ab iis recensentur,

quæ

quæ uno ferè ictu morbum profligent, si fides eorum promissis sit habenda. Displicet aliis hæc curta supellex, et in vitium incidunt contrarium; pomposam memorant farraginem, et remediorum cumulo obruunt ægrum. Utraque praxis evitanda, neque solis emeticis curatio committenda, nec sine his tentanda; cùm longiores adimant labores, et compendio quasi rem gerant, quæ pluribus adminiculis cæteroquin indiget. Remedia antihydropica, priùs memorata, suum opus absolvere videntur, motum et attritum fluidorum ciendo, pellendo, diffiando exuberantem lympham. His omnibus simul conducit nisus emeticus fortis, sæpiùs repetitus; crassa quippe comminuit, obstructa reserat, propellit stagnantia, humida exsiccat, secretiones aquosas auget, solutum sanguinem compingit, resolvit viscidum, celeriorem ad extrema facit appulsum, movetque sudores. Adde quòd ingentem in tumefactum abdomen vim exerit, et quum in hoc tantummodò sedem habet morbus, nec quopiam viscere pessundato, nec in corpore valdè senili, et recens sit, repetitis emeticis, benè institutâ diætâ, et exercitatione modicâ, res tutò expeditur, nisi in iis sit, *(a)* " quibus inutilis libertas est, nec " tam facilè coguntur ac ii, qui servitutis bene- " ficio convalescunt." In hydropis etiam provectiori gradu haud parùm conferre visa est emesis. Idem comprobat historia apud Forestum *(b)*

(a) Celsi medicina, lib. iii. cap. 21.
(b) Observ. lib. xix. obs. 33.

recitata

recitata de quodam hydropico, qui " inflatus " ventre, manibus, pedibusque et facie, à me- " dicis destitutus, et tanquam desperatus, adiit " littus marinum, et naviculam per aliquot mi- " liaria ascendit in altum maris, et provocato " vomitu, post vomitum exercitio utens, sani- " tati restitutus est." Huc afferre licuerat Sydenhami suffragium, quod in tractatu suo eleganti de hydrope crebrò fert, et sententiam de horum commodo plurimis exemplis iteratâ observatione ratis, suffulcit; at diserta ejus verba in arte seniores probè callent, ad ipsum libellum juniores lubenter amandantur, cujus evolutio,

------ *si propiùs stes*
Te capiet magis; ------ et
------ *decies repetita placebit.*

Hoc tamen in morbo haud mochlicis pugna committenda est, nisi viscera aliaque ita se habeant, ut antea [§ 44.] observatum.

56. Ex enarratis hactenus liquidò patebit, in morbis pleriſque à colluvie serosâ natis, quænam ab emeticis exspectanda sint. Patebit quoque horum usus in morbo qui puerulis utriusque sexûs infensus, gravis nec infrequens, rachitide scilicet; qui à vitiis in abdomine natis, ad medullam usque disperſis sæpiùs productus, ipsa corporis fulcimenta pedetentim suffodit, et durissima ossa, inflexibilia ferè, nimis facilè flectenda reddit. Mali ortus et progressus, curatoria indicata, nec non ratio, quâ huic morbo vomitoriis

riis iteratis occurri possit, ex sequentibus clariùs cernuntur *(a)*.

1*mo*, Ossa, quæ in toto corpore jam solidissima sunt, olim gelatinæ fluxiles, membranæ, cartilagines fuere, quæ paulatim durescentes, per diversos soliditatis gradus, ossa tandem fiunt rigida.

2*do*, Hujus indurationis causa duplex existit, materiæ scil. ossificæ à sanguine secretio, et secretæ appositio firma, sive compressio particularum ad se invicem fortis. Hæc effecta sunt virium vitæ integrarum, et musculorum vicinorum incumbentium. Ideoque

3*tio*, Si sanguis particulis ossium structuræ idoneis minus dives sit, secretio minor erit, et muneri suo ineptior. Porrò, si absit actio musculosa, et vires langueant, altera causa ossificationis abest. Hinc itaque

4*to*, Liquet istas conditiones, quæ rachitidem parere possint, omnes ejusmodi esse quæ chylopoiesin et hæmatopoiesin depravare solent. His ergo imprimis erit prospiciendum, et medicina id genus eligenda, quæ et vitium in ipsis officinis diversimodè corrigat [§ 18, 27, 39.] auferat, nocivos ejus effectus, in aliis locis pullulantes, emendet, atque impetûs motûsque formantis defectui optimè subvenire possit [§ 49.] Viscerum quidem saburram feliciter educunt purgantia: sed si fortiora fuerint, aut nimis sæpè repetita,

(a) Vid. Alex. Monro's Anatomy of human Bones, p. 34, &c.

vires

vires prosternunt admodum, crassiora relinquunt, sed vapida, et obstructionibus creandis magis opportuna; et debilia jam facta solida adhuc debilitant. Emetica validè expurgant viscera, nec vitæ viribus adeò funesta, solida corroborant; imprimis si victus accuratus instituatur, si corpus in frigidam sæpè immergatur, si denique specificis leniantur subinde nata symptomata.

57. An in arthritidis insultibus utilis sit vomitus necne, quibus, quando et quoties exhibendus, definire haud leve est. Illi, quorum auctoritas mecum præ plurium valet, in paroxysmis omninò ejus usum dehortantur, nisi urgeant nausea, vomitus, aliaque ventriculi sordes scatentis signa; et tunc lenia tantummodo admittunt. Alii *(a)* verò haud infimi subsellii medici stant contra; urgetque unus *(b)* se observâsse "in-"sultus arthriticos consuetos, perpetuò ferè mi-"tiores, quando statim inter initia leni emetico, "vel solo, vel cum laxante mixto, prima regio "à sordibus evacuata fuerit." Qui valet, has lites dirimat: ego, iis missis factis, emeticorum usum in alio ejusdem morbi stadio demonstrare paucis conabor; id est, inter paroxysmos, ad futuros avertendos. Acris illa materies, in anguſtiis hærens, et dolores cruciantes excitans, post exacerbationem podagricam (si rectè res geratur, nec intempestivo medicaminum externè vel internè applicatorum usu suffocentur incepta na-

(a) See Dr. Cheyne's Essay upon the Gout, p. 77, &c.
(b) Hoffmanni Dissert. Decad. 1. p. 411.

turæ)

turæ) expellitur, sudor lenis locum affectum perfundens, vel, si deterius adhuc malum, et sedes habeat profundiores, erumpens tophus, insequens inde levamen, symptomatum omnium remissio, hanc evacuationem criticam fuisse designant; ideoque morbi fomitis in sanguinem, partesque nobilioribus vitæ functionibus dicatas, nequaquam metuendus erit regressus, sed quod morbi jam supereſt instar alius cujusque chronici sævioris abigendum. Fluida, si prava sint, mendis purganda, infirma solida roboranda, vires totius corporis instaurandæ, stirps denique atrocis mali quantum valet ars succidenda. His plurimum confert medicina gymnastica, quæ præ cæteris aliis suppetiis infracta membra novâ virtute reficit. Equitatio, vectio in rhedâ, curru, &c. sunt optima subsidia. At quoties hæc prohibet parum amica tempestas anni? Hyeme aut vere sæpissimè contingit podagræ decessus, pejus tamen adhuc si autumno intermittat. Aër enim humore gravis frigidusque foràs egredi omninò prohibet; atque intra porticus, vel domûs penetralia, pedibus insistere, aut motu quovis corpus torqueri, ægrè admittunt artus distorti, et nuperis cruciatibus claudicantes. Fricto sanè leviter tantummodo mundat exteriora, neque evacuat è viscеribus pituitam, quæ ob omissum tamdiu motum ea necessariò gravare incipit. Præterea rarò desunt ægro gratulabundi sodales, qui pignus amicitiæ charius dare nesciunt, quam propriam salutem poculis evertere, hominisque ex morbo recreati exitium moliri, dum sanita-

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tem priſtinam verbis exoptant, reverà autem inſidias ſanitati ſtruunt. Ex his atque ſimilibus cauſis, emeticum ſæpè ſæpiùs perquam neceſſarium eſt convaleſcentibus, neque ex prædictis colligere arduum erit quâ ratione exercitationis etiam fortioris vice fungatur. Patet etiam quibus modis actionibus animalibus opitulentur vomitoria, craſſa quomodo ſubigant, denique plus minuſve ſingulis indicatis reſpondeant: neque verentur ex practicis ſagaces, bis in menſe, ſæpiùs quandoque, iſtiuſmodi hominibus vomitum præcipere. Perſpectis itaque horum commodis in chronicis pleriſque, eos morbos levi pede percurrere animus eſt, qui ſexui ſequiori tantummodo infeſti ſunt.

58. Non modò vitæ ratio, ſed ipſum ferè vitale ſtamen fœminis molliorem ac laxiorem temperiem dediſſe videtur, niſi ſors durior alienam impertita ſit, atque mens ſana, in corpore ſano laboribus improbis indurato, eis firmitudinem donaverit maſculæ vi omninò æmulam. Eſt tamen vitæ ſtadium, quo etiam hæc mulierum conditio ex errore levi peſſimis obnoxia malis evadit; eo ſcilicet quo ſexûs diſcrimina jam adfutura ſint, id eſt, ad vel circiter annum ætatis 15: huc uſque enim, ſenſu medico, genus unum idemque eſt. In quibus autem diſcrepant, quare, quæ cauſæ phyſicæ diſcriminis, referre non opus eſt; fuſiùs ea ab aliis tractantur. Sed brevis morborum recitatio, quum lucidiori argumentorum explicationi inſervire poſſit, propoſito haud incongruum videtur.

Imo,

1*mò*, Adveniente molis augmenti termino, eadem organa, qnæ corpori virgineo pabulum miniſtrârunt et incrementum, plus pergunt conficere quàm ſola corporis nutritio jam exigit; quod ſupereſt ſanguinis per vaſa uterina jam periodicè emittitur. Si diutiùs retineatur ob deficientes vaſorum vires, vel impeditum exitum, plethora plethoræ ſuperadditur, et morbi virginei indicia citò ſeſe produnt.

2*do*, Si verò aquoſus, ſolutus vel acris ſanguis uterum pervadat, et momentum abſit quo dilatentur vaſorum oſcula, eòuſque ut rubrum ſanguinem deponant; is lateralia permeat, in glandulas, quæ cavum uteri ubique obſident, infunditur, craſſeſcit; exit tandem liquor viſcoſus, colore diverſus, nunc albus [à quo *fluor albus* appellatur] vel albicans, vix lintea tingens, flaveſcens, virideſcens, nigricans, et omnibus affectus coloribus qui inter hos exiſtunt; nunc ſine fœtore tranſit, nunc graveolet; nunc mitis, ut in initio plerumque, et diutiùs vigente morbo acrior, coloratior, fœtidior evadit. Patentes glandulæ tenuiores quoſcunque ſeparant humores, et eliminant; inter quos nutritivos, qui ſolidis vigorem, momentum fluidis ſuppeditâſſe debebant. Hinc indies à viribus aliquid ſubtrahitur, perit membrorum virtus, labitur digeſtio, vitio magis indelebili fluida corrumpuntur, et per totum corporis œconomiam ſerpit labes, quâ nullâ (expertos aſſerentes audivi) ex toto chronicorum agmine, ſexui crudelior, curatu difficilior, aut effectibus exitioſior. Nam fatiſcunt imprimis inſtrumenta

strumenta ipsa, quorum ope cætera reparari debuerant, et morbi sedes in viscere ponitur, cui omnium difficillimè fit medicina. Id quidem haud citò labefactatur, sed si semel infectum fuerit, vitium diu servat; " Quia pars est, inquit " Forestus *(a)*, quæ promptè recipit aliarum " partium excrementa, tum ob situm inferio- " rem, tum ob multitudinem venarum eò per- " tingentium, tum etiam propter consuetam il- " lam naturalem purgationem." His adde compagem solidam et vasculosam, remediis, quorum vires longo circuitu decoquuntur, antequam huc deferantur, haud facilè cedentem. Etiam post emendatam cruoris indolem, laxa glandularum fabrica pertinaciter obstat medelæ, atque ea medicamina, quæ harum mollitiei adversantur, constringunt quoque arteriolarum orificia, et molestiorem reddunt menstruationem. Laxitas nativa, victûs prava ratio, vita deses et luxuriosa hunc morbum plerumque inducunt, *Rariùs enim*, ut ab eodem Foresto observatum, *id pati vitæ sunt agrestes mulieres*. Eadem quoque *(b)* fluxum uterinum suppressum sæpè præcedunt. Remedia ergo hisce morbis adhibenda sunt, quæ noxis, ex istiusmodi causis subortis, obviàm eant; neque vomitoria repetita omittenda sunt: præter enim effectus, qui hactenus indicantur, stomachum expurgandi, solida stimulandi, et sanguinem mirè atterendi, hunc tanto impetu versus uterum pro-

(a) Foresti observ. lib. 28. Obs. 21.
(b) Opera Doctoris Freind, p. 67, 80.

pellunt, ut exempla prostent *(a)* in quibus sola vis ejusmodi mechanica tardatum fluxum repentè profuderit: atque, nisi δυσεμὴς sit ægra, vel incommodè ferat emetici actionem, haud minora in fluore albo quàm in plerisque chronicis exspectanda sunt. Sæpiùs autem in hoc morbo motu leviſſimo fatiscunt vires, unde incommodi plus quam fructûs accipiunt. Hoc ergo in primis indagandum, priùsquam porrigantur emetica ægris hujusmodi.

59. Nihil etenim ex omni parte perfectum atque beatum: sua secum trahunt commoda, et etiam incommoda vomitoria; nec minus verenda hæc, quàm appetenda ista, si fortè infelici auspice porrigantur. Infausti autem eventus remedii utilitatem haud minus prædicant quàm effectus optabiliores; insitam ejus vim demonstrant, efficaciam probant, dum porrigentis imperitiam vel temeritatem redarguunt, nec hominis excidii reum habendum est medicamen, sed manus quæ ineptè vel intempestivè ministrant. Quamvis autem, ex traditâ de emeticis doctrinâ, facilè perito patere possit, in quibus casibus utilia, in quibus nociva sint; haud tamen alienum est, ut brevi horum morborum enarratione claudatur dissertatio, in quibus vomitus imprimis vitandus.

1*mo*, Nativa corporis structura apud nonnullos *(b)* scriptores causa exstat, quo minus quibusdam propinentur emetica; quibus habitus macer et gracilis, collum extensius, pectus an-

(a) Plateri obs. med. p. 191. Hildan. obs. cent. 3. obs. 58.
(b) Vide Fallopium de Purgant. p. 81.

gustum,

gustum, atque ad vomendum difficultas; quibus denique sanguinis sputum, animi deliquium, tussis molesta, familiaria fuere, ab emeticis liberati sunt: qui verò contrariâ temperie præditi sunt, horum usum salutarem ex consulto medicorum sæpè sunt experti. In vehementiorum usu hæc sanè perpendenda sunt, ne forsan temeritatis vel incuriæ pœnas luamus; nec in leniori vomitu præcipiendo penitùs omittenda. Idiosyncrasia quædâm, experientiâ ægroto cognita, at à medico, nisi ab ipso didicerit, nunquam detegenda, hujus vel illius medicaminis usum vetaret, quod aliter ab ignaro porrectum multa mala est pariturum.

2*do*, In morbis inflammatoriis, ubi sanguis adusto lentore inquinatur, immeabilis in arteriarum finibus sistitur, neque vi propellendus; ut in febribus acutis, inflammationibus topicis, pleuritide, phrenitide, hepatitide, aliisque ejusmodi; vires vitæ minuendæ potiùs quàm provehendæ: ergo peractâ accessione, urgente sævissimo dolore, tutum non erit emeticum.

3*tio*, Neque, si multum lædatur visceris, sive partis alicujus actio, quæ tonica dicitur, sive æquilibrata potentia, quâ solida fluidis reniti deberet, minuatur, emetici fortioris vim mochlicam experiri licet, antequam ratio partis habita sit, an tantæ vehementiæ impetum commodè ferat, vel incommodi majoris fiat particeps. Sic v. g. in hydrope abdominali exsiccat emeticum, sed tumorem pro aliquo saltem tempore extendit.

4*to*, In pulmones emeticorum vis sanè ingens est, quia nisu vomitorio tam subitò per eos di-

mittitur sanguinis inassueta moles, quâ distenduntur vasa, comprimuntur vesiculæ, quibus fortiter reagens intra detentus aër, pressuram validam longè validiorem reddit; et, si dehiscentia priùs vasa sanguinem effuderint, vulnuscula certò certiùs ampliata hœmoptoen augebunt. Quin et in incipiente hœmoptoe, ab externâ causâ producta, dum sanguis adhuc blandus, nec sordidâ tabe contaminatus, vix ferè ad emeticum licet confugere, quo è vesiculis pulmonicis excutiatur latens cruor, qui, stagnando corruptus, morbum, alioqui haud periculosissimum, intenderet. Pulmonicis igitur vix porrigenda sunt, nisi puris inundatio pulmones obruat, et lethum à suffocante materiâ, aliàs inevitabile, adfuturum sit.

5*to*, Denique cavendum est ab horum usu in eis morbis, qui pro causis agnoscunt sanguinem multum crassum, pituitam valdè tenacem, copiosam, penè immobilem, aliamve quamcunque hujusmodi materiem, cerebrum et nervorum fontem gravantem, ut gravior apoplexiæ, paraplegiæ, hemiplegiæ species, veternus, carus et ejusmodi. Altiùs enim morbum plerumque figunt, vel in ipsâ forte operatione hominem interimunt. Vix ab eorum usu dehortatione opus est, licet aliqua symptomata ea necessaria esse alioquin innuerent, quando imminet adhuc hæmorrhagiæ metus, post vulnerata aut detruncata membra; vel denique quando per ampliores abscessus, aut aliud quodcunque ostium, apertus paratur exitus, per quem facto ingenti impetu emanet cum vitâ cruor.

A MEDICAL

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MEDICAL INAUGURAL DISSERTATION:

ON THE

USE OF EMETICS,

IN VARIOUS DISEASES.

By JOHN FOTHERGILL.

EDINBURGH,

M,DCC,XXXVI.

To the following celebrated Profeſſors, his Preceptors; viz.

JOHN RUTHERFORD, Doctor of Medicine, and Profeſſor of the Theory and Practice of Phyſic in the Univerſity of Edinburgh:

ANDREW ST. CLAIR, Phyſician to the King, Profeſſor of the Theory and Practice of Phyſic in the ſame Univerſity:

ANDREW PLUMMER, Med. Doct. Profeſſor of Medicine and Chemiſtry at the ſame Place:

ALEXANDER MONRO, R.S.S. Profeſſor of Anatomy and Surgery in the ſame School of Phyſic:

AND ALSO

CHARLES ALSTON, Doctor of Medicine, Phyſician to the King, and Profeſſor of Botany:

On Account of the many Favours conferred upon him,

THIS INAUGURAL SPECIMEN,

Which the laudable Cuſtom of the Univerſity requires,

Is offered, with all due Submiſſion and Eſteem, by

JOHN FOTHERGILL, A. & R.

A TRANS-

A

TRANSLATION

OF THE PRECEDING

MEDICAL INAUGURAL DISSERTATION,

ON THE

Uſe of EMETICS in treating various DISEASES.

PROŒMIUM.

AS vigour of body, *acumen* of mind, preſent health, and a foundation for future, with the ſweetneſs of a life unmoleſted by diſeaſe, depend in great meaſure on the ſtate of that noble viſcus the ſtomach; ſo phyſicians, both antient and modern, have uſed every effort to preſerve a function of ſo much utility to the body in a ſound ſtate. They knew, by experience, that if the ſtomach was healthy, leſs was to be feared from other parts; but this being diſeaſed, other parts could not long remain ſound. We daily obſerve that the gout, dropſy, ſcurvy, conſumption, inſania, the worſt kinds of

fevers (and other ſtill worſe diſeaſes, if worſe can be) ſeldom happen but the ſtomach is firſt affected; and if by chance they ſhould ariſe from ſome other part, yet they become more ſevere in proportion as this great animal laboratory recedes from a healthy ſtate. Hence therefore it appears, how much thoſe who miniſter to the aid of nature in curing diſeaſes, ought earneſtly to attend to its ſafety. But the faults of the ſtomach itſelf, and of the matters it contains, as alſo the diſeaſes which ariſe from hence, often require the aid of depletion; and moſt commonly there is no remedy more happily exhibited, either to take off the faults of the one, or eradicate the effects of the other, than evacuation by vomit. Hence emetics were ſo much celebrated among the antients, that Hippocrates *(a)* even recommended them to the healthy, if they wiſhed to remain ſo, and often adviſed to repeat them; although medicines of this claſs, common among the antients, were extremely rough and unmanageable, and could not be given without diſguſt to the patient and anxiety to the phyſician.

PART THE FIRST.

1. VOMITING is that action of the ſtomach, diaphragm, and abdominal muſcles, by which the contents of the ſtomach, be-

(a) Hippocrat. de diæta, lib. 3. et alibi paſſim.

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ing ſqueezed as in a preſs, are thrown up by the mouth with great force; for by the contraction of theſe viſcera, all the other viſcera of the abdomen are preſſed upwards; hence the pylorus is conſtringed, and the matters contained in the ſtomach being preſſed by the muſcular force of it *(a)*, and the ſurrounding parts, into the upper orifice, they dilate it, and eaſily force their way through the contracted longitudinal fibres of the œſophagus.

2. Any powerful ſtimulus thrown into the ſtomach, and applied to its nerves, may excite this action, on account of the connection between the nerves of the ſtomach and thoſe of the abdominal muſcles and diaphragm.

3. Too great a quantity and bulk of things taken into the ſtomach, though they ſhould have no other diſagreeable ſtimulus, or at leaſt but very little, may excite nauſea, and then vomiting; ſuch are cold water mixed with ſome aromatic ſubſtance, ſweetmeats, and thoſe dainties which, pleaſing the palate, are greedily ſwallowed beyond the bounds of moderation.---Whatever irritates the nerves of the ſtomach, or any way greatly diſturbs the equable motion of the nervous fluid, will excite vomiting; ſuch as, a contuſion, or vehement ſhaking of the head; the motion of a ſhip or carriage, to thoſe not uſed to it; a ſtrong imagination or recollection of ſome unpleaſant nauſeous thing: theſe, and the like,

(a) Wepfer de Cicuta Aquatica, cap. 15. hiſt. 1.

will

will sometimes affect the delicate with great disgust and vomiting.

4. But it is found that all substances, though endowed with a stimulus, do not with equal certainty produce their effects on the stomach and neighbouring parts, but sometimes promote an excretion by one, sometimes by another of the emunctories: antiquity therefore set apart certain substances for this purpose only, which they found almost constantly excited vomiting, and which experience had taught were peculiarly adapted above others to perform this office. These the Greeks called Ἐμετικα, EMETICA; the Latins VOMITORIA.

5. But the catalogue of these was defective among the antients, though large; for they were acquainted with few emetics, which are not found to be either extremely rough and unfavourable, or altogether gentle and weak; at least if our catalogue of simples, marked with this title, be the same as theirs, as will appear to any one who examines their writings. The Veratrum, or *White Hellebore*, was sometimes fatal, and the action of others doubtful. What wonder then if patients afflicted with some dangerous disease, preferred any other kind of remedy to a violent and cruel, or else too gentle, uncertain, and often an ineffectual emetic? Hence the patient, alarmed, detested the physician, and the physician hesitated to give the remedy which promised so much relief; from which both the one and the other suffered considerable inconvenience.

ence. And although Hippocrates underſtood the method of moderating the force of emetics, yet many others leſs ſkillful were often diſappointed in their expectation. And chemiſtry, which has diſcovered ſo many famous remedies, hardly ſupplies us with any emetic which we can give with ſafety to the young and delicate. Sydenham alſo in his time lamented, that even then there was wanting an emetic, which was both ſafe, and at the ſame time *ſufficiently efficacious*, ſuch as practitioners now find in the celebrated Ipecacoanha root. But it is not my purpoſe to deſcend to particular emetics; it will be ſufficient only to point out their claſſes according to their various powers.

6. It has been the cuſtom of ſome to divide this order of evacuants into *gentle*, more *powerful*, and the *ſtrongeſt* emetics; and not improperly; for thoſe different ſimples uſed at preſent to excite vomiting may be conveniently ranged under this threefold order. No regard however muſt be had to their efficacy as diſcovered by the ſenſes, that is of ſmelling and taſte, but the diſtribution muſt be founded wholly on experience.

7. Emetics called *lenient* or gentle are of two kinds; 1. Such as by their bulk, or by a very ſlight irritation united to their bulk, offend the ſtomach: ſuch are, water that is warm, viſcid, ſugared, mixed with honey, oil, or ſalt; fat broths, infuſions of green tea, carduus benedictus, chamomile-flowers, and others of the like kind,

kind, drawn from different aromatic plants, 2. Of this order are, the ſmall doſe of a more powerful emetic, which poſſeſſes a ſtimulus ſo ſtrong, that in a diminiſhed doſe it can provoke either a nauſea, or an attempt to vomit, without urging its effects any farther. Theſe are chiefly taken from the claſs of ſalts, which, being immediately diſſolved in the gaſtric juices, and quickly diſperſed every way, are applied to the nerves, and ſhortly thrown up, and being wholly diſſolved, are waſhed off by the liquors drank, and their effects preſently ceaſe.----A thread paſſed down the œſophagus, an irritation of the gullet by a feather wet with oil, a nauſeating idea, an unuſual agitation of a ſhip, the ſhaking of a carriage drawn over a rough road, and laſtly, the ſlighter paſſions of the mind, belong to this claſs. I do not deny but the cauſes juſt mentioned excite violent vomitings in ſome perſons, but in the generality they do not, nor do their effects continue long and powerful.

8. The claſs of *ſtronger emetics* is formed out of thoſe mentioned § 7, number 2d, the doſe only or cauſe being increaſed; or it may be formed of thoſe ſubſtances which have a more firm texture, and hence produce a more ſlow but more vehement effect: for, ſhooting out their vellicating particles, they inſinuate themſelves by degrees into the cells and foldings of the inner coat of the ſtomach, adhere to the nervous fibrillæ, and create and increaſe uneaſineſs; and, the ſeat where they fix being covered, they cannot

not be thrown off by the redoubled efforts of vomiting, until their ſtrength by repeated operation be weakened; hence ariſes a longer and more vehement vomiting. --- Many medicines which operate by vomiting, in frequent uſe in the preſent practice, are to be added to this claſs: of vegetables, for example, aſarum, ipecacoanha, wild horſe-radiſh, muſtard-ſeed, ſquills with their various preparations and combinations: of metals, ſome ſalts, the products of chemiſtry, as the vitriol of ſteel and vitriolic ſalts; but thoſe prepared from copper ſeem to merit a preference to all others, that is, the ſal cupri and its tincture. To theſe muſt be added emetic tartar, and a diminiſhed doſe of ſome out of the claſs following.

9. We call thoſe the *moſt powerful* emetics which the dogmatic and eſpecially rational art avoids, on account of the cruel and vehement effects often experienced from them, and which conſtant obſervation has taught cannot be exhibited without imminent danger to the whole machine, and which are very ſeldom preſcribed except by a bold medicaſter, or by a regular phyſician in ſome certain diſeaſe which requires the moſt powerful remedy; although indeed it is difficult to fix the exact limits between this and the preceding claſs. The vegetable kingdom affords many medicines of this kind, eſpecially under the claſs of purgatives, the doſe of which being increaſed, often produces cruel vomitings, and particularly if taken from the re-

ſins.

ſins. Reſinous ſubſtances are but little miſcible with the animal fluids, and remaining undiſſolved, they accrete to the cavity of the ſtomach, and occaſion the moſt violent pains, ſpaſms, and exceſſive vomitings: this is evident from thoſe tortures which the ſick experience after taking the reſin of jalap, or any other of the ſame kind, not rightly diſſolved by triture, or made miſcible with our fluids by ſome other method; whilſt perhaps the natural humours are deprived of their native ſoap, and all is full of a watery phlegm. To theſe may be added the white hellebore, ſome ſpecies of the tithymali, tobacco, and many other plants called deleterious: the claſs may be increaſed alſo by the more acrid preparations of antimony, and thoſe emetics prepared from mercury, together with many poiſonous metals.

10. From the deſcription hitherto given it is evident, 1. That vomiting cannot be excited without ſome ſtimulus (I mean any thing which can alter the motion of the vital fluid, or the action of the nerves) applied to ſome region of the nervous ſyſtem. 2. That from the action of that upon the nerves, and of theſe upon the muſcles, § 1. there neceſſarily happens an evacuation of the contents of the gaſtric region. 3. Laſtly, That theſe can by no means happen without a ſtrong compreſſion of certain parts, a powerful concuſſion of others, and a great motion of the whole body. Theſe always attend the moſt gentle vomiting; they increaſe, as the power

power of the emetic is extended; and, the stimulus being increased, they may be carried even to the ruin of the structure of the parts.

11. The fore-mentioned conditions are always connected with vomiting, and most of those changes produced or expected from emetics, are entirely dependent upon them: being about, therefore, to enquire, what are the effects of these, arising from that threefold cause, I shall reply to these questions; viz. What is the use of an emetic, merely as a stimulant? or, merely as an evacuant? and lastly, How far can it affect the whole body by its mechanical force?

PART THE SECOND.

Of the Use of Emetics, derived from their Stimulus.

12. ANATOMY has not yet discovered any parts of the body which may properly be esteemed the objects of stimuli, except the nerves, which primarily suffer the effects of them, whatever they be, and propagate them to other parts, as appears by many experiments. For by experiments we learn, that not only the part to which the irritating substance is applied suffers a change, but also the effect is propagated to the origin, termination, and extremities of the spreading branches of the nerves, and also to the branches shooting off to the opposite region of the body, though from a different cause.

13. The

13. The principal effects are, a greater acceſſion of the vital energy to the part affected, and a diminution of it in others; and, the equable moderate diſtribution of it being loſt, the motion is both accelerated and confuſed. But theſe will all be different in degree, and more or leſs conſpicuous, according as the vehemence and force of the exciting cauſe is different, and according to the diſpoſition, number, and bigneſs of the nerves, and the thickneſs of the coats with which they are covered.

14. Moſt of the learned acknowledge, that this cauſe or energy, § 13. is a moſt ſubtile moveable liquid, endowed with all the common properties of a fluid, and derived from the brain, by a conſtant, gentle, placid motion, to every ſeparate part of the body. Nor will any one deny this, who has attentively read over what Boerhaave *(a)* has written on this ſubject; or well conſidered what our celebrated profeſſor of anatomy *(b)* has ſaid upon it, in an order and method ſtill more clear and beautiful.

15. Nor does it ſeem probable that the animal ſpirits are ever hurried along with ſuch unbridled precipitate impetuoſity, as to become the cauſe of ſo many prodigious effects, or to form the eſſence of ſuch a number of diſeaſes: or that this diſpoſition to motion, can ariſe from any exceſſive preternatural mobility; for the impetus

(a) Boerhaave's Inſt. § 275, ad 292.
(b) Monro's Anatomical Treatiſe of the Nerves.

of the spirits depends only on strong vital powers, whereas diseases of the nervous system most frequently occur in persons of an opposite habit and disposition of body, that is, in the relaxed and feeble; in whom the vital powers are weak. It is certainly extremely consonant to the laws of the animal œconomy, that this liquid should be moved sometimes quicker and sometimes slower: but there is so great a difference between the greatest velocity, and the greatest degree of inactivity, that we cannot easily allow this to be the only origin of diseases. The unequal distribution of the spirits may produce many tumultuous motions in the body, commonly attributed to a vitiated state of the nerves; and those phænomena which usually accompany diseases called nervous, are much more easily explained on this supposition; nor does the action of the muscles oppose our theory.

16. Any pungent acrid substance, applied to a nerve or its branches, produces this unequal distribution, so that spasms and convulsions arise; which may increase even to the extinction of life. Compression also made on the origin of any more remarkable nerve, produces the same effect; or even an obstructed egress of the spirits through their canals, from any cause whatever; by which the neighbouring tubes receive them in a fuller stream. The different proportion of solids and fluids peculiar to every age, as also the temperament peculiar to every person, very much increase or diminish this disposi-

tion; for the younger the perſon, and the ſofter and more relaxed his habit of body, the more readily, other circumſtances equal, are the nerves irritated or compreſſed. Experience confirms this opinion: for the variolous contagion, even of the mildeſt kind, ſeldom attacks children richly fed, whoſe blood is full of ſpirits, and whoſe ſkin is endowed with remarkable ſoftneſs, but dreadful contractions and ſpaſms enſue: fits alſo not unfrequently ſupervene, altogether ſimilar to a true epilepſy. Nor do hyſteric fits always happen from a poverty or want of the vital fluid, ſince they attack women of leiſure, and diſſolved in luxury, more than others to whom a harder fate is allotted.

17. Theſe things thus premiſed, we may eſtabliſh this general rule; that if a diſeaſe ariſe from a ſtimulus applied to ſome particular part, it is to be relieved by deſtroying the ſtimulating cauſe, or by applying another ſtimulus to the oppoſite part; for the equilibrium being thus reſtored, the diſeaſe will terminate.

18. The effects mentioned § 13, chiefly take place in the nerves and muſcles. Other, however, and different effects ariſe in the neighbouring parts, ſuch as pain, redneſs of the ſkin, and heat; an afflux of humours with tumor or ſwelling; a compreſſion and obſtruction of the veſſels; a deſtruction of them, ſuppuration, and gangrene. Theſe happen to the internal as well as external parts of the body.

19. The remedy of which we now treat, poſ-

ſeſſes all the general virtues of ſtimuli hitherto mentioned. It has this, however, peculiar to itſelf, that we may commonly preſcribe more certain limits to the action of emetics, than to any other internal ſtimulant whatever; for other internal ſtimuli ſometimes exceed the bounds intended, and rage more fiercely than is proper, or elſe are too ſluggiſh and inactive; whereas the force of an emetic may be increaſed or repreſſed almoſt at pleaſure, if we only except the more vehement poiſons.

20. From what has been ſaid § 13 to 20, it appears what uſe an emetic is of, conſidered as a ſtimulus. It produces remarkable effects, among which the following are the moſt conſiderable. The ſlighter ſpecies of apoplexy, which ariſes from a cold, ſluggiſh, pituitous matter, the cauſe being recent, and the body not very old, is often terminated by an emetic prudently exhibited; for hence the thick humours are concocted and thrown off, the ſmall mouths of the nerves are opened, their paſſage is rendered free, the motion of the torpid blood being at the ſame time accelerated. It produces the like effects in a ſimilar kind of palſy.

The epilepſy is a diſeaſe common in children, ariſing from ſome acrid matter corroding and vellicating the nerves. It often happens in adults from the ſame cauſe, and alſo from the ſtronger paſſions of the mind; from ſevere pain affecting the limbs; from a diſordered motion of the ſpirits, ſuch as is common to hypochondriac and

hyſterical perſons. In theſe caſes, if the fomes of the diſeaſe be moveable, it is thrown off by repeated vomiting.

The muſcular membrane, which connects the cartilaginous ſegments of the trachea together, is formed of muſcular contractile fibres, and obnoxious to ſpaſm, eſpecially in thoſe in whom the nervous ſyſtem is too irritable and moveable. Theſe fibres are often inſtantly conſtringed, the cartilages are drawn together, and obſtinately reſiſt their uſual elongation; the patient draws his breath quick, eagerly catches at the air, groans deeply; when at length fatigued with labour, and ready to ſink under his anguiſh, he feels the ſpaſm relieved, the breaſt is expanded, and he begins to live as it were anew.---What hinders, but that a doſe of vitriolic ſalt, the ſalt of copper, or its tincture, ſpeedily given, might calm theſe tumults, by irritating the ſtomach, exciting vomiting, and changing the courſe and track of the ſpirits? The experiment is certainly free from all danger.

When the blood begins to acquire that diſpoſition which among the antients was called *atra bilis*; when the natural functions fail through a want of ſpirits; when the ſpirits improperly paſs only to ſome nerves, and theſe only exerciſe certain functions of body and mind; in this caſe a better remedy can ſcarcely be exhibited than an emetic, moderated by certain cautions, as afterwards we ſhall have occaſion to mention.

In ſpaſmodic diſeaſes, and many others of the nervous

nervous kind, which ſeem to ariſe from inactivity and languor in the chylopoietic ſyſtem, emetics ſeem to be of real ſervice. The *Chorea Viti*, a diſeaſe which certainly for obſtinacy is ſecond to few of this kind, even ſometimes acknowledges the power of this remedy *(a)*. And though emetics are not of uſe in theſe diſeaſes merely by their ſtimulant power, yet they do much good by ſoliciting a greater afflux of ſpirits towards the organs, which ſuffer through a penury or want of them, and are hence obnoxious to diſeaſe.

Laſtly, in moſt chronic diſeaſes, when a thick pituitous matter ſpoils the comely habit, the ſolids, loaded with it, vibrate too ſlowly, and the fluids, now become viſcid, are propelled through the veſſels with greater difficulty, and, the general powers of the body being either loſt or depraved, demonſtrate either a want or too great a ſluggiſhneſs of the vital fluid, as in a ſpontaneous gluten or acrimony; emetics, although they do not perform a cure merely as ſtimulants, yet they are to be preferred to all other remedies, eſpecially if we take into the account the other effects of vomiting.

21. The other effect of the action mentioned § 18, is a quicker ſecretion of the thinner fluids: this the irritation or ſtimulus performs in two ways; firſt, it increaſes the motion of the blood in the larger veſſels, by exciting them to a more frequent and ſtronger re-action on the fluids, and

(a) Cheyne's Eſſay on the Gout, p. 113, edit. 4.

procuring an attenuation of them; and hence an aptneſs to ſecretion: ſecondly, it facilitates the preparation, and accelerates the paſſage of the humours in the organs of ſecretion themſelves. Hence, from the ſame ſtimulus different ſecretions are increaſed, according as it is differently determined to this or that ſecretory organ.

PART THE THIRD.

Of the Uſe of Emetics as Evacuants.

22. IT ſeems not improper to divide the effects of an emetic, conſidered as an evacuant, into two kinds: the firſt is a depletion of the ſtomach, its contents being thrown up; the ſecond, an increaſed excretion in other parts by the exertions of vomiting. But as this does not acknowledge vomiting as its proximate cauſe, it may more properly be placed among the mechanical effects of an emetic, and merits the appellation of an univerſal evacuation. The other particular is an expulſion of the matters lodged in the inteſtines, or driven thither by the force of ſtimuli, or laſtly, which have flowed back from the neighbouring parts into them; concerning which, a good method requires that we now ſpeak.

23. Subſtances hurtful to the body, taken in by the mouth, or carried into the ſtomach from ſome other part, require the inſtant relief of an emetic; nor does the art of medicine know any more powerful aid effectually to extirpate the morbid effects of them, or to ſoften and melio-

rate

rate ſome alarming ſymptoms produced by them, *than a vomit.*

24. Food and drink are juſtly reckoned among the *ingeſta* mentioned paragraph 23; for the inevitable lot of life makes theſe neceſſary as long as we breath the vital air: but the reaſons I paſs over. And the very different quality of the ſubſtances from which our food is prepared, often foreign to the nature of our body; the incautious uſe of ſome things, and exceſſive gluttony in others; laſtly, an appetite for ſomething forbidden or hurtful, a fault in the choice of meat and drink, and in the moderate quantity of them; have introduced innumerable complaints into the ſtomach. Hence the fruitful progeny of diſeaſes, threatening cruel pains to the ſtomach itſelf, and hurtful to the extreme windings of the veſſels; all of which the nature of my undertaking requires me to explain ſeparately, but the narrow limits of time forbid it: and indeed my labour would be loſt, ſince the taſk, compleatly finiſhed, was not long ago publiſhed under your auſpices, in an elegant diſſertation *(a) de noxis ex cibi potuſque uſu et abuſu oriundis.*

25. Too great a quantity of things taken into the ſtomach produces the diſeaſes there deſcribed; theſe are uſually relieved by depletion, which, if the patient have a diſpoſition towards it, is to be made by vomiting; for by this method the offending matter is quickeſt carried off, and any

(a) Autore Henrico Tong.

part of the crude unconcocted aliment prevented from paſſing into the interior parts of the body.

The vitiated quality of food requires the ſame remedy, whilſt it remains in the ſtomach, or is not carried far beyond it. Subſtances which have a greater native tenacity than what the powers of the body can overcome, retaining their own nature, corrupt, and paſs into a kind of ropy phlegm. The caſe is the ſame if the expulſive faculty of the ſtomach be weakened or hindered, which, as practitioners teſtify, often happens in debilitated habits; for then, though the *ingeſta* be not remarkably faulty either in quantity or quality, yet they ſpontaneouſly contract a vitiated quality, which ariſes from, and is increaſed by their delay in the ſtomach. Hence ariſe different ſpecies of acrimony; hence the ſpring of mucus, and a tough pituitous matter; which as they ſeparately prevail, or are mixed together, aided by the temperament of the perſon inclined to this or that, they produce different, and ſometimes truly alarming ſymptoms. So many kinds of depraved appetite; a total loſs of it; a diminution or exceſſive increaſe of it; a vitiated, leſſened, or total want of digeſtion; or a corruption of the undigeſted matter; often ariſe from theſe as their proximate cauſes.

It may eaſily be learned from the patient himſelf, what had been the prediſponant cauſe; and hence the quality of the matter will appear, and what remedies are to be uſed. Emetics evacuate the fomes of the complaint, and utterly eradicate

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the proximate cauſe. Yet we muſt not truſt wholly to theſe; but by exhibiting ſtrengthening remedies (a vomit being repeated at proper intervals) we deſtroy the diſeaſe from its loweſt root.

26. If any acrid ſubſtance taken into the body either by chance or deſign, whether under the name of a medicine or a poiſon, threatens an injury to the ſtructure of the parts, it is to be expelled as ſoon as poſſible, and eſpecially by thoſe paſſages where it may paſs out of the body ſafely, without hurting the other parts. If only a ſmall quantity has entered the inteſtinal tube, an emetic is to be greatly preferred to any other remedy, and often finiſhes the cure; nor muſt it be omitted, if a very ſmall portion only continues to adhere to the ſtomach. The firſt claſs, mentioned ſection 7, affords an ample ſupply of remedies, by which many ſpecies of poiſons are vanquiſhed and expelled; and if there be ſuch a thing as an univerſal antidote, it is perhaps warm water copiouſly drank. In the choice of theſe remedies, however, there is need of prudence; expulſion does not always compleat our wiſhes, but the tender parts to which the poiſon or acrid matter is applied, are to be preſerved from its injuries, the pains to be mitigated, and the raging cruelty of the poiſon appeaſed, even while we attempt a ſpeedy ejection of it. And here alſo, the nature of the matter taken into the body being known, points out to the phyſician the means of procuring a timely relief

relief to the unhappy ſufferer. So alkaline ſalts diluted, are oppoſed to the acid poiſons; ſaponaceous ſubſtances prepare the oily for mixture; water and watery bodies divide ſalts of all kinds, and deſtroy their powers; acrids take off the effects of thoſe which have an oily glutinous viſcoſity; and ſo of the reſt. The reader may conſult what Boerhaave *(a)* has ſo excellently written on this ſubject, in his chapter on *antidotes*.

27. Nor does there only happen by emetics an evacuation of the ingeſta, but alſo of all the humours carried into the ſtomach from other parts. Theſe come either from the veſſels of the ſtomach itſelf, or from thoſe of the neighbouring viſcera. And indeed the effects of pungent ſubſtances, mentioned § 21, are no where more clearly ſeen than in this viſcus. This will appear, if we conſider the abundance of nerves diſperſed through the coats of it, the number of glands and their office, and laſtly the capacity of the veſſels with which this viſcus is furniſhed in proportion to its bulk. The ſoftneſs of the coats gives an eaſy entrance to the nerves, and a ſpacious cavity exhibits a large ſuperficies. Hence ariſes a more remarkable action, or a more plentiful excretion of the gaſtric liquor; which, as it is always large, if it be increaſed, muſt neceſſarily in ſome meaſure alter the whole body, by diſpelling and drying up the ſerous humours.

(a) Inſtitutiones Medicæ, § 1119.

Hence

Hence arise those excellent effects of emetics in diseases originating from a serous vapid *colluvies*; as in catarrhs, the leucophlegmatia, diabetes, *fluor albus*, and others of this kind, of which we shall speak more fully in the following sections.

28. The liver and pancreas are situated near the stomach; and both of them sometimes discharge their secreted fluids into its cavity; which by their quantity or acrimony, or both, may disorder chylification. The bile is frequently accused as guilty of producing diseases, the pancreatic juice more seldom. The antients blamed the bile as the parent of the most cruel disorders; but many of the moderns deny this, and contend that the bile is not so frequently the cause of complaints as the antients imagined: but if these had well understood what the antients meant by bile, the wiser amongst them at least, would perhaps have thought their *dogmata* ought not to have been so rashly rejected; for not only the liquor supplied by the liver and gall-bladder came under the title of bile, but also a considerable part of the whole mass of blood, which the moderns commonly call *oil*; which, as we learn from chemistry, is as fruitful a source of diseases at present, as it was formerly under the celebrated name of *bilis flava*. But here we treat of the vesicular and hepatic bile, propelled upwards into the stomach, or of any other liquor brought thither, which is productive of like mischiefs as the bile itself; and such is the oily humour sometimes thrown up by vomiting;

miting; yellow, of an horrible bitterneſs, and taſte ſcarce ever to be forgotten, reſembling the bile, except only that the bile never blazes in the fire, but this, like pure oil, catches flame if it be thrown from the mouth on burning coals. It ariſes from oily meats, changed by the heat of the place into this moſt filthy diſagreeable matter; aided alſo by too inſatiable an appetite, as *Horace* intimates:

Nempe inamareſcunt epulæ ſine fine petitæ;
Illuſique pedes vitioſum ferre recuſant
Corpus. ----------

The bile, and this yellow filth approaching to the nature of it, have alike this quality, that ſtagnation in a hot place renders them both more acrid and horrible; much in the manner of oil, which, expoſed to a gentle continued heat, paſſes from a taſte extremely bland, a ſmell not remarkable, and a yellowiſh colour, through various degrees of corruption, to the higheſt pitch of putridity, and at length puts on the moſt violent acrimony to the taſte, exhales the moſt rank mephitic ſmell, and preſents to the eyes an ugly blackneſs. Both kinds of bile juſt mentioned, evidently undergo ſimilar changes, are ſubject to the ſame laws, wherever collected in the body, until the uneaſy gueſts promote their own expulſion. For otherwiſe the pitiable ſufferer is tortured with dreadful cruel pains, gripes, naufea, and vomiting, which do not however terminate the pain, but continue to harraſs the patient even till death, eſpecially

eſpecially if a hot temperament of the perſon, the heat of the ſun, a rancid or fermenting food, have added fuel and flame to the diſeaſe. Here then is the cholera, the moſt direful of diſeaſes: a fever is kindled, the viſcera are inflamed, the ſtrength fallen ſinks under the load, and unleſs another Sydenham ſits by the bed, and watches over the patient, a gangrene creeping on the viſcera terminates the cruel torture and life together. But the matter which cauſes the diſeaſe is ſeated within the confines that ſuſtain the force of an emetic; and the removal of the cauſe is indicated; why not then try an evacuation by emetics, or downward by purgatives, or by both, ſeeing it is yet lodged in the *primæ viæ?* It is not without cauſe that prudent phyſicians have rejected the uſe of theſe in ſo great a violence of the diſeaſe; for, whatever good effect the one or other may perform in other diſeaſes, or in a milder degree of this, yet in ſo violent a *cholera* we muſt rather uſe reſtraints than ſtimuli, as will eaſily appear to any one who conſiders the caſe: for the mucus of the ſtomach and inteſtinal tube, as far as this acrid inflaming liquor has extended, being abraded, it is now applied to the naked nerves, and excites cruel pains, violent obſtinate ſpaſms, kindles burning fevers; and, the remaining mucus being conſtantly thrown up by the emetic, the cauſe of the diſeaſe is increaſed, and, by the continued efforts of vomiting, the dreadful effects are redoubled; for although the emetic have but the ſmalleſt degree

degree of ſtimulus, yet this, whatever it be, adds ſtrength to the enemy lodged within; ſtimulus is added to ſtimulus, and by the united efforts of theſe the patient periſhes. But if the diſeaſe have not attained this degree of violence, if hope be not quite cut off, and if every thing perſuades us to attempt the cure by emetics, then the point will turn on a ſkilful choice of the remedy: for neither bile, nor the oily matter, will unite with every kind of liquid; it refuſes one, but follows and unites with another. That, therefore, which is moſt proper to promote a mixture muſt be uſed, regard being had to the known diſpoſition of the diſeaſe, to which the remedy muſt always be oppoſed. Hence *ſaccharata*, *mellita*, *ſaponacea*, mixed with aceſcents, and all thoſe mentioned ſection 7, number 1, which act rather by their bulk than ſtimulus, ſeem to promiſe ſucceſs above others.

"Whenever bile is to be evacuated," ſays Foreſtus *(a)*, "after much broth, or after a free "drinking of ſome liquid, vomiting is to be "excited; for bile, like oil, ſwims on the top "of theſe, and on that account is more eaſily "evacuated; its acrimony alſo is moderated by "a mixture with them." A rule is certainly always to be obſerved in curing bilious vomiting; which being neglected, the worſt miſchiefs ſometimes enſue. A cathartic, inconſiderately given, carries a part of the corrupted matter

(a) Foreſt. Obſerv. lib. 18. obſ. 3.

lower, and perhaps into the blood; hence again new miseries arise.

29. So great an overflow of pancreatic juice seldom occurs, as alone to be esteemed the cause of disease; but in the course of diseases, it may increase them: for as in health so large a secretion of it is made, as Brunnerus' experiments shew, in diseases arising from a redundant lymph it may yet become more copious, and an evacuation of this by an emetic will diminish the serous colluvies.

30. The accessions of fevers are commonly accompanied with nausea, vomiting, and other symptoms, which shew the stomach to be in a bad state: it ought, however, to be carefully distinguished, whether this sickness arises from the viscus itself, or from its contents; for an inflammation of the membranes of the stomach requires one kind of treatment, and the stomach loaded with corrupted sordes, and free from inflammation, another. It seems not to have been well understood by the more antient writers, that this viscus is equally obnoxious to inflammation as any other part whatever, until Frederick Hoffmann *(a)*, in his Dissertations, observed that it happens more frequently than is commonly supposed. He lays down the diagnostic signs by which the physician may avoid the latent rocks on which the incautious ea-

(a) F. Hoff. Dissertat. decad. 1.

sily

ſily ſtrike. All theſe Boerhaave has explained in his uſual manner, with large improvement, in his book *De cognoſcendis et curandis morbis*, to which he has annexed a neat method of cure. From an ignorance of the true ſource of the commotions which ſo often happen in the ſtomach in the beginning of fevers, have ariſen thoſe contentions, ſo anxiouſly agitated among practitioners, concerning the uſe of emetics in treating theſe diſorders. Some argue ſtrenuouſly againſt their utility, adduce inſtances of their pernicious effects, and with a grave countenance forbid their uſe: others extol their ſalutary effects to the ſkies, and call in to their aid hiſtories of ſucceſsful caſes not leſs credible than the former. Indeed it is eaſy to ſee that neither of them are much miſtaken; for what excruciating tortures does a vomit excite in the ſtomach, when the veſſels are turgid with thick blood; when the diſtended nerves ſuffer the moſt violent pains on the ſlighteſt colliſion againſt the *ingeſta*; and when the coats of the ſtomach are affected with tumour, hardneſs, and pain, reſembling a true phlegmon on the external ſurface of the body? What miſchiefs then muſt an operation, joined with ſuch violence, produce in ſuch a ſituation of things? But the cauſe of pain and uneaſineſs oftener proceeds from the contents of the ſtomach, and then certainly an emetic produces commendable effects; and Hippocrates, Sydenham, and the moſt famous practitioners in the healing art,

warrant

warrant their uſe. Reaſon alſo, ſupported by practice, ſpeaks the ſame thing: "*(a)* If vo- "miting," ſays *Sydenham*, "or an ineffectual "propenſity to it, has diſturbed the patient, an "emetic muſt by all means be preſcribed." For, as Hippocrates teſtifies, if any one chuſes to exhibit much water to a perſon vomiting, ἐκκλυσθήσεται δι ἃ ἐμέει σὺν τῷ ἐμέτῳ, οὑτῶ μὲν διὰ τὸ ἐμέειν ὁ ἔμεος παύεται; *the cauſe of the ſickneſs will be waſhed off with the emetic, and thus by a vomit the vomiting will ceaſe.* Nor is this the only advantage gained, but it will alſo be of great uſe both to the phyſician and patient, through the courſe of the diſeaſe, as we learn from *Sydenham*. "To "exhibit a vomit, when there precedes a pro- "penſity to it, is ſo neceſſary, that, unleſs the "humour be expelled, it will become the ſource "of many diſeaſes, a torment to the phyſician "through the whole courſe of the cure, and "throw the patient into great danger. Of "theſe effects the chief and moſt common is a "diarrhœa, which generally follows in the de- "cline of a fever, as often as an emetic, when "indicated, has been omitted. And although "the propenſity to vomit may have been over "ſome time, yet the diarrhœa will ceaſe as ſoon "as an emetic is exhibited, provided the pa- "tient have ſtrength to bear it." Nor has this famous writer delineated the blackeſt ſtate of things; for this putrid matter, by ſtagnating in

(a) Sydenh. de morbis acutis, § 1. cap. 4.

the ſtomach, becomes more putrid, and, paſſing into the blood by the abſorbents, rendered empty by heat and loſs of fluids, it pollutes the vital fluid with malignant ſordes, and renders the fever in all reſpects more ſevere; all which might have been prevented, if an emetic had been exhibited as ſoon as this propenſity to vomit appeared. Concerning the choice of emetics, a caution muſt alſo here be repeated; viz. that we chooſe thoſe which are moſt fitted to waſh off the ſordes, are moſt oppoſed to their nature, and change and correct them; and laſtly, which may perform the office of diluents, if by chance (which may happen) any part of them ſhould be abſorbed into the blood. For theſe purpoſes, thoſe mentioned ſection 7, claſs 1, are ſuitable, being rendered more efficacious by ſome out of § 8; for example, oxymel of ſquills with ipecacoanha root, or with a large draught of ſimple oxymel, or any other thin liquor, as the occaſion may require.

31. In treating fevers, we ought not to forget a caution mentioned by moſt practical writers, that in all diſeaſes where a plethora is preſent, or where the habit tends to one, and where the condition of the patient requires at the ſame time an emetic, bleeding ought always to precede it, leſt the ſtrong effort of vomiting, and a ſort of momentary tetanus, ſhould rupture the diſtended veſſels, or too great an impetus of the blood be determined to thoſe parts where there is leaſt reſiſtance. For, the veſſels being ruptured,

tured, pour out their fluids, and the patient immediately dies, either of an apoplexy or an hæmoptoe; or he periſhes at length of an incurable phthiſis, or from an affection of the lungs; or is cut off by the morbid affections of ſome other viſcera. That vomiting ſeems to be of moſt uſe, which is excited immediately after bleeding; for the inconveniences of a plethora are then more certainly avoided, and the ſalutary effects of the emetic are more certainly obtained, eſpecially if the diſeaſe be a fever, which requires the help of both; for the veſſels being emptied of part of their contents by bleeding, ſometimes ſuddenly become turgid again, either by the rarefaction of the blood, or its bulk being increaſed by the quantity of liquids drank on account of the great thirſt; hence the ſame inconveniences ariſe as before: nor can we exhibit an emetic before bleeding has been repeated, though it might have been given with ſafety a few hours after the firſt evacuation.

32. The operation of emetics in intermittent fevers ſeems ſomething wonderful, as they ſometimes exhibit effects not leſs difficult of explanation than the nature of the diſeaſe itſelf; for although the extremities of the ſanguiferous veſſels, or perhaps ſometimes the nerves, are principally affected, yet an evacuation of the matters collected in the inteſtines is of great moment. There are inſtances of perſons cured by a vomit only, whether ſpontaneous or excited by art; whilſt bleeding, except in plethoric habits,

generally does harm, and renders the diſeaſe more difficult of cure. But emetics, prudently repeated, carry off by degrees the corrupted fomes of the diſeaſe from the *primæ viæ*, accelerate the motion of the blood, and laſtly either take off the diſorder, or make way for the ſafe exhibition of a febrifuge; which otherwiſe would fix the fomes of the diſeaſe more obſtinately, and, an evacuation being excited upwards or downwards, it would loſe its effects.

33. Nature anxiouſly attempts, by the paſſages opened by chance or art, to throw off the prepared febrile matter, and again reſtore the body to health. Sometimes ſhe attempts it by the emunctories appropriated to certain excretions, as by ſpitting, vomiting, alvine fæces, ſweat, or urine: at other times by paſſages leſs proper, as when tumours ariſe on the external ſurface, and the like. It is a rule well known to all, that (a) *Quæ educere oportet, quo maximè vergunt, eò ducito per loca convenientia:* "*Whatever* "*is to be evacuated, ought to be expelled by thoſe* "*natural emunctories to which it principally tends.*" If it appears that the criſis of a fever will happen by ſpitting, the aiding hand of art ought to promote that ſecretion. The like rule muſt be obſerved in vomiting, if we know it is critical, or excited by ſome matter offenſive to nature; but if it ariſe from inflammation of the ſtomach, and cannot be relieved by a vomit, it ought to be

(a) Hipp. Aphor. § 1. Aphor. 21.

ſtopped.

ſtopped. The caſe is the ſame if the matter attempts an egreſs by any other emunctory; for the longer any concocted matter, fit for expulſion, is retained in the body, the greater inconveniences it produces. The purulent fever affords us a melancholy but juſt example of this; when, in thoſe affected with the ſmall-pox, the ſecondary fever, ſo called, ſupervenes from an abſorption of purulent matter: nor is the critical putreſcent matter of any other fever leſs malignant, but requires inſtant evacuation. There are remedies at hand proper to promote this or that evacuation, according as nature points out the way; only we muſt obſerve, that as the concocted matter of the diſeaſe, which paſſes off through the pores of the ſkin, is ſo loaded with contaminating particles, that it often affects the healthy; ſo a ſimilar matter is depoſited in the cavities of the ſtomach and inteſtines, which is happily to be carried off ſometimes by a cathartic, ſometimes by an emetic; leſt, perhaps, *being left after the criſis of a diſeaſe, it ſhould occaſion a return of it (a)*. Celſus alſo adviſes, that it ſhould be carried off by vomit after a fever *(b)*.

34. We may add a great number of diſeaſes to thoſe already mentioned, which receive ſingular help from this remedy. There are few chronic diſorders which do not require the help

(a) Aphor. Hipp. § 2. Aph. 12.
(b) Celſi medicina, lib. 3. cap. 7.

of emetics; but a particular enumeration of them would lead me too far. Moſt diſeaſes common to children, a ricketty or ſtrumous diſpoſition, the ſaburra, fomes and neſt of worms, and the like, are often ſucceſsfully cured by emetics. The gout, dropſy, a milder degree of ſcurvy, common to adults, ſometimes are relieved by vomiting: the chloroſis, and fluor albus, in the weaker ſex, often require this help. A catarrh, diarrhœa, dyſentery, cæliac paſſion, and every diſeaſe ariſing from a ſerous colluvies, are relieved by a vomit. It is ſcarce neceſſary to mention how much emetics, exhibited at proper intervals, contribute to promote long life. There are ſome perſons at preſent, who, though not given to gluttony, nor wanting the means of carrying off the dregs of a full meal, yet, mindful of the advice of the antients, eſteem vomiting of ſo much conſequence, that two or three times a month they empty the ſtomach of its ſordes by a vomit. He who ſtudies the moſt exact rule of living, often neceſſarily commits ſome error in diet. Hence ſooner or later the fault affects the ſtomach, and there firſt lays the foundation of future diſeaſe. Sickneſs, or a troubleſome nauſea, is ſometimes felt, a loſs of appetite, and various other ſymptoms appear, according to the different nature of the cauſe, and the manner in which the ſtomach is affected. Many betake themſelves immediately to ſome celebrated tincture, drawn with ſpirits from bitter aromatic plants; in this they confide and indulge

dulge themselves, till, habituated to them, they at length die with their stomach and bowels parched and worn out. We know no remedy which seems to promise so many and great advantages to sedentary persons, liable to crudities in the *primæ viæ* from a sedentary life, as an emetic. It carries off the disease when produced; it destroys its proximate cause, by washing off the acrimony which most commonly constitutes it. To the studious, therefore; to those whose state of body forbids much exercise; and lastly, to persons who sit much in their business, or on any other account are exposed to similar diseases, I would recommend the frequent use of emetics.

PART THE LAST.

Of the Use of Emetics, arising from their mechanical Force.

35. THE third question remains yet to be explained; viz. What are the mechanical effects and uses of emetics in removing diseases? We shall therefore next enquire into the parts affected, what change they undergo, what is hence produced in other parts, and what happens in the whole body.

36. The abdominal muscles being contracted, (§ 1) and made rigid, almost like the bony column which defends the posterior parts, not moveable by any force of this kind; and the

diaphragm being strongly forced downward, to which are opposed the immoveable bones of the pelvis, the cavity of the lower belly is every way diminished, and the whole contents of it powerfully squeezed together. Nor is there any part of the abdominal region free from this forcible pressure, the great force of which is evident from the vehemence with which the contents are thrown upward; for certain experiments incline us to believe that there is no contractile power in the stomach sufficient to throw up its contents, till assisted by the strong compression of the parts mentioned, which compleats the evacuation; and the soft viscera lying under these parts, are affected with the violence of their action, whence great and useful effects may be expected.

37. But before we enter into a disquisition of these effects, it will not be improper to take a view of the actions of the abdominal viscera, according to the following general division of them; that, their office being known, we may more easily know the morbid changes which take place in them, and that it may more clearly appear in how many ways this vehement mechanical alternate compression of these viscera may be of use.

38. Their principal offices are, 1. To prepare from the ingesta a matter fit for nourishing the body: 2. To separate what is proper for nourishment from that which is improper: 3. A farther preparation of the same matter, when changed

changed into blood, by powers ſituated beyond the abdomen: 4. To ſecrete liquids extremely uſeful to the purpoſes of life: 5 and laſtly, To ſeparate and throw off from the nouriſhed parts, the reſidue of ſolids and fluids now become uſeleſs. Thus; 1. The ſtomach and ſmall inteſtines prepare the chyle. 2. The lacteals and abſorbents ſeparate the more fluid from the groſſer parts. 3. The blood in the large meſeraic arteries, and others diſperſed through the abdominal viſcera, ſuffers a continual concuſſion, reciprocal compreſſion and propulſion; all which are more eſpecially obſervable in the ſpleen. 4. The blood, thus prepared, flows conſtantly through paſſages appointed for it; viz. through the liver, pancreas, and the numerous glands every where diſperſed through the lower belly; in this courſe the quality and form of it are changed, according to the laws appropriated to the nature of each particular organ. 5. The groſſer filaments being corrupted, are preſſed forward and timely excreted: the thin and watery part of the blood, loaded with ſalts and oil, unfit for nutrition, paſſes off by the kidnies, and forms the urine. All theſe offices are promoted at the ſame time, and by the ſame means; that is, an alternate conſtant agitation, the neceſſary conſequence of reſpiration; for if this motion and gentle concuſſion of the abdomen ſhould ceaſe, there would be no force ſufficient to propel the fluids through ſuch narrow winding canals, eſpecially

cially in the lower part of the belly, where they ſometimes lie under a conſiderable preſſure: the force of the heart alſo would be unequal to the labour impoſed upon it; the great power of abſorption would ceaſe, though too great to be limited by any preſcribed bounds; for the viſcera, not being agitated by the motion of other parts, a ſpontaneous viſcidity would ariſe in the fluids, and gradually obſtruct the canals, or form ſo many impediments in the ſmall tubes, that their progreſs would preſently ceaſe, either in ſome or all the viſcera, according as theſe miſchiefs had more or leſs extended themſelves. And, indeed, the ætiology of diſeaſes ſhews, that many complaints of the abdomen ariſe from one or other of theſe cauſes, or from both concurring together. An attenuating remedy, therefore, which accelerates the motion of the parts, is more eſpecially indicated.

39. By the effort of vomiting, the ſuperficies of the viſcera are ſtrongly preſſed together, their bulk is diminiſhed, and the fluids circulating through them are preſſed together, rubbed one againſt another, and againſt the ſides of the veſſels: they are alſo propelled forward, and driven out where a paſſage opens for them. Hence ſecretion and expulſion is quicker; the thick matter is reſolved and prepared for ejection; all the actions (§ 37) riſe to maturity, vigour appears in the organs, and, all obſtacles being removed, they act with eaſe; on which both the quantity

quantity and quality of thoſe ſecretions, which may be eſteemed the preſervatives of health, immediately depend.

40. The inner cavity of the ſtomach is extremely full of glands and exhalant veſſels, from the villous flexible mouths of which a liquor is ſecreted, by which it is lubricated and preſerved moiſt, the nerves are defended from the injuries of the food, and chylification is promoted. But the mucous nature of this liquor neceſſarily diminiſhes and retards its ſecretion, loads the glands with a viſcid matter, and gradually ſubverts their office, eſpecially if its motion be ſlow, which is commonly the caſe with a mucous fluid. Hence ariſes a deficiency of the gaſtric fluor, crudity, and indigeſtion, an appetite diminiſhed or too much increaſed, heat in the ſtomach, ſometimes nauſea, and thirſt. The ſame miſchiefs ſometimes occur from dried cruſted ſordes lining the cavity of the belly, as after an acute continued fever, when the attendants, or perhaps the too cruel phyſician, have unjuſtly thwarted nature, craving a ſupply of her diminiſhed lymph. Diluents are not ſufficient in theſe caſes, they even relax the veſſels more; hence the languid fluids, by their delay, preſently thicken, not eaſily again to be reſolved. An emetic, which produces the effects mentioned § 29, is of great ſervice in theſe complaints; for the whole abdomen ſhould be conſidered in this reſpect as ſomewhat ſimilar to the lungs. Indeed, every viſcus has ſome office peculiar to itſelf;

ſelf; but the motion by which a conſtant change of fluids is promoted and takes place in every one, ariſes from ſome other part; ſo that a mixture, compreſſion, attrition, ſolution, and the like, take place in the fluids here, juſt as happens in the thoracic viſcera. The ſame cauſe produces the ſame effect, though in different organs: a vomit, therefore, performs ſpeedily what nature by ſlow ſteps attempts in vain to obtain.

41. Coſtiveneſs, the uſual companion of a ſedentary inactive life, generally ariſes from a deficiency of the mucus of the inteſtines, and from a want of the gaſtric juice, ſupplied from the glands and veſſels, (§ 40). The gaſtric juice ought to render the fæces ſoft and moveable, and the mucus procure them an eaſy deſcent. The cauſe of this defect is the ſame as mentioned above, (§ 40) and the cure muſt be attempted by the ſame means, only with the additional help of exerciſe and motion. I do not ſuppoſe that this complaint always ariſes from this cauſe; but if it has ariſen from any other, it is increaſed by this, and the perſon, not regular before, becomes at length coſtive. Gentle purgatives, indeed, carry off the fæces, remove the preſent inconveniences, and moderate the uneaſineſs of this ſituation: but if the patient indulge himſelf too much, as often as coſtive, in remedies which ſeem to give ſo much relief, he will ſcarcely avoid other inconveniences from this quarter; for, all the humidity being drawn off with the fæces, the belly will become ſtill more coſtive,

the

the viscera will be obstructed and stuffed with the remaining thick matter. On two accounts, therefore, (§ 34, 40) an emetic recommends itself to persons of a sedentary inactive life; that is, as it expels the crude matters, and by accelerating motion attenuates the viscid, and thus performs the office of an excellent diluent.

42. A complaint of an opposite nature sometimes afflicts the stomach and intestines; that is, a kind of deluge of a watery liquid, in which the *ilia* being immersed, become tired, lose their heat, and the parts destined to perform the vital function become unequal to the task. A weight and langour about the precordia, frequent spitting, loss of appetite, belching up a watery matter, more especially troublesome in the morning, great nausea, but suddenly going off, frequent liquid stools without pain, with universal debility, inactivity, and paleness, are the signs of this watery inundation, and at the same time point out the serous dissolved state of the blood. The symptoms now mentioned pretty clearly indicate the method of cure. An evacuation of the redundant fluid, and strength added to the small vessels, are first necessary; hence will follow a firmer crasis of the blood, and a change of its pituitous diathesis; and for these purposes emetics are especially useful. Hence we see why a vomit checks a diarrhœa, and also removes costiveness, according to the maxim *(a)* of Hippocrates, repeated and approved by Celsus.

(a) Celsi medicina, lib. i. cap. 3.

43. The

43. The ſtructure and office of the pancreas, being ſimilar to that of the ſalival glands, render it liable to ſimilar complaints; namely, to have the ſecretion of its fluid either diminiſhed or too much increaſed. In both caſes an emetic is uſeful; it removes the obſtruction, if not too obſtinate, and, by compreſſing the viſcus, carries off the ſuperabundant fluid.

44. A little below the pancreas, the aliments, now rendered liquid, are abſorbed by the mouths of the lacteals, and immediately carried to the meſeraic glands. The ſlow motion of theſe, and the ſmallneſs and winding ſtructure of the veſſels, promote a ſeparation of the thin from the thicker parts, but render the paſſage of the chyle to the blood difficult, eſpecially in delicate habits, and thoſe who feed on bad food, or have the ſtructure of theſe parts badly formed. Children, from inexperience, weakneſs of their conſtitution, and ſtrong inclination to groſs improper food, are more ſubject, than perſons of more advanced age, to infarctions and ſwellings of the meſeraic glands. Similar cauſes will produce ſimilar diſeaſes in adults, but they are not ſo common, for we ſee in reality that children are moſt ſubject to theſe kinds of obſtructions. At this age there is ſcarcely any thing more pleaſing to the palate than raw unripe fruit; leguminous, farinaceous, viſcid ſubſtances, and other kinds of eatables the moſt viſcid, are then eſpecially ſought after and uſed, without any attention to the effects this ſpecies of luxurious

appetite may produce. Hence a tough matter is formed in the ſtomach, and at length paſſes into a viſcid liquor, though hardly changed except in appearance: paſſing from the ſtomach, it meets with an inactive bile, is diluted with it, but not diſſolved. The more fluid part enters the lacteals, but on account of its tenacity ſtops there: the cauſe is every day renewed, the obſtruction grows and increaſes, the tumor becomes harder, preſſes on the neighbouring parts, and blocks up the paſſage to the veins; hence an atrophia is produced, and the miſerable ſufferer daily pines away: or, if the diſeaſe does not proceed ſo far, nor wholly obſtruct the glands, yet an imperfect chyle is mixed with the blood, contaminates it, and, the glands being every where affected, eſpecially thoſe about the face and neck, the ſecretions made from it are vitiated; the face becomes ſwelled and diſtorted, and ſhews either a true ſtruma or a diſpoſition verging towards it. This is, doubtleſs, a dark face of things, and difficult for the phyſician: the ſolids have loſt their ſtrength, the fluids are too viſcid, and the parts which ought to change the aliments into the nature of the body, being depraved, leave concoction imperfect. The glands alſo being obſtructed, the blood is precluded all means of acquiring new vigour; and the glands, once clogged with viſcid matter, with difficulty perform their office and evacuate their contents. It appears, therefore, that every kind of help muſt be uſed to remove ſo obſtinate a diſeaſe.

A reſolution

A resolution of the tumours is first to be attempted, that, as far as can be done by food and medicine, we may nourish the body, cure the depraved, and strengthen the weak parts. Then the texture of the parts in which the disease is seated must be so strengthened as to concoct and expel the offending fluids, regard being still had to the manner of living. They who know the situation of the mesentery, will easily conceive with what violence it will be pressed on every side, by the efforts of vomiting; and what effects will follow on glands newly obstructed, on the neighbouring parts loaded with a foul matter, (§ 39) on the pancreas abounding with the like, (§ 43) and lastly, on the stomach, by throwing up the acrid humours (§ 34) hurtful to it, and occasionally supplying new strength to the disease. But we ought carefully to examine if the viscera are sound, corrupted by no ulcer, and wholly free from any putrescent waste; for otherwise an imprudent emetic would be very hurtful. The same also is true, if from laxity alone a rupture be feared; for in this case mechanical force must be sparingly applied. Nothing else forbids the use of an emetic; nor will our expectations of great good from it be disappointed, provided the obstructing matter be moveable, and the strength of the patient sufficient to bear repeated operations.

45. Of all the abdominal viscera, the spleen is of the softest most delicate structure, and the fleshy muscular columns seem rather adapted to support

ſupport its flexible fabric, than to propel the large quantity of blood it receives: nor is the impetus of the heart, being diminiſhed in this viſcus by the winding ſtructure of the veſſels, nor the ſtrength of the artery, ſufficient for this purpoſe; but they are aſſiſted by a conſtant gentle agitation, which the ſpleen receives from its connection with the diaphragm, its nearneſs to the abdominal muſcles, and its pendulous ſituation: and from theſe cauſes chiefly the progreſs of the blood through the veſſels of the ſpleen is thought to be preſerved. If therefore the uſual motion ſtop, or be for ſome time diminiſhed, as happens to thoſe of an inactive life, the blood is retarded in the ſmall cells and cavities, becomes thicker, and is in the greateſt danger of producing an obſtruction, from a want of the neceſſary mobility and uſual impetus, the cauſes of a free eaſy paſſage to the blood. The mode of giving relief muſt be varied, according to the ſtage of the diſeaſe and the different cauſes that may have produced it; for one method of cure is not proper for every perſon affected with complaints of the ſpleen. If the infarction be recent, and the hardneſs great; if it has ariſen from omiſſion of exerciſe, or too great an application of mind to ſome object; if there be a ſenſe of painful diſtenſion without much matter collected, and the habit of body in other reſpects good; mechanical compreſſion may be applied to advantage: but if the hardneſs ſeems to indicate a ſchirrus, or if the ſpleen has been inflamed by a preceding fever, and con-

verted into a bag of pus, then we muſt have recourſe to other remedies, leſt by irritating the ſchirrus we change it into a cancer; or, the membranes confining the pus being ruptured, the abdomen ſhould be overflowed with a purulent matter, or the liver affected with a putrid waſte.

46. Among the diſeaſes which affect the liver, the unſightly jaundice moſt frequently diſcovers itſelf to view. Medical writers have aſſigned many proximate cauſes of this complaint. But the author of an elegant little tract on the jaundice, inſerted in the Medical Eſſays † has ſaved me the trouble of reciting them ſeparately, or diſcuſſing them. We may allow with this author, who choſe to conceal his name, that the moſt frequent cauſes are, ſtones generated in the veſicula fellea, and lodged in the duct, too narrow to give them paſſage: for, beſides the hiſtories adduced by this author, his other reaſonings in the following volume ‡ abundantly confirm it. Now ſuppoſing this to be the caſe, which ſeems highly probable, medicines which act by mechanical force, are to be preferred to all others. Walking, riding, and other motions which conſiderably agitate the body, are of this claſs; by the help of which the gall-ſtone is puſhed forward, and the obſtructed bile iſſues forth. Theſe, doubtleſs, greatly promote the deſcent of the bile; but ſometimes they fail, the diſeaſe requiring a ſtronger propelling cauſe; and if an

† Vol. i. art. 33. ‡ Vol. ii. art. 28.

emetic

emetic ever be useful from its mechanic force, and if the seat of disease, and the nature of its cause, ever favour its salutary effects, it is certainly here: nor are we often disappointed in our expectations; for, a large quantity of liquor being drank, the stomach, like a bag turgid with a warm fluid, is applied almost upon the constricted duct, and relaxes it; whilst the bile lodged behind is urged forward by the action of vomiting, (§ 36.) Or if we suppose the cause seated in some other part, for example, in the first origin of the biliary ducts, where they arise from the extremities of the *vena portarum*, or elsewhere, and that the obstructing cause be a thick purulent matter, or small stones lodging fast; in these cases an emetic will be of considerable service, if the disease can be remedied by the help of art.

47. Whenever the kidnies are affected with pain, nature, by drawing the stomach into consent, and exciting motions or uneasiness in it, from a common consent of nerves between these two viscera, seems to point out the way by which any thing that would be hurtful to the kidnies, by a longer delay, may be dislodged from them. 1. A gypseous, mucous, purulent matter, either produced here or brought by metastasis, being too thick to pass the fine vessels of the kidnies, or having passed, lodges too long in the renal sinus, daily increases in bulk, presses on the neighbouring parts, or rubs against them, and causes the most excruciating torments. A stone being in this case often formed, is forced into the ure-

ter, too narrow to receive ſo large a ſubſtance, the muſcular ſenſible coats of which being injured by the rough ſuperficies of the ſtone, contract themſelves cloſer, and ſtrongly oppoſe its farther progreſs, the pains at the ſame time becoming almoſt too great to be endured. Veneſection being firſt performed, the ſtricture is to be removed by topics and univerſal remedies; after which, mechanical force performs what art can do. Nor is this the only effect of a vomit in this diſeaſe; but the liquor drank performs the office of a fomentation, and, together with a clyſter, makes a kind of internal bath, which, by its watery halitus, relaxes the ſtrictures, and, by increaſing the volume of the contents of the lower belly, it acts with greater force on the kidnies and ureters.

2. A morbid flaccidity of the kidnies from weakneſs of the veſſels, ſometimes permits ſuch a flux of watery liquor to paſs off, as reſembles a ſpecies of the diſeaſe called by the Greeks a diabetes. There frequently is paſſed a conſiderable quantity of thin watery urine, almoſt without colour, taſte, or ſmell, attended with a troubleſome thirſt, proſtration of ſtrength, great loſs of fluids, and a waſte of the ſolids. But a worſe ſpecies of the diſeaſe happens, when there is an efflux of a whitiſh, chylous, ſweetiſh liquor, which antient practice ſuppoſed peculiar to this diſeaſe, and which modern practice has confirmed; for though the diſeaſe be very uncommon, yet it is met with ſometimes; and whether it may have ariſen from relaxed

relaxed vessels of the kidnies, or a dissolved state of the fluids, or from any other cause, the curative indications, as Sydenham observes *(a)*, must be wholly directed to strengthen and invigorate the blood, and to restrain the preternatural flux of urine; and we may add, to take away the morbid laxity of the vessels of the kidnies.

What has been said above, (§ 42) concerning the power of emetics in evacuating fluids, sufficiently evinces how much it answers to the two first indications. The situation of the kidnies, and their nearness to the bones, shew what mechanical effects may take place in them, and how strongly the efforts of vomiting may evacuate the redundant humour from their substance. It certainly expels the lymph, which in some measure macerates the kidnies, and thus restores the lost tone to the fibres.

48. It is hardly necessary to observe how exceedingly the muscles, affected with a strong spasm, compress the uterus, tumid with its burden, (§ 36.) The time of delivery therefore approaching, every thing which adds a stimulus to them must be carefully avoided: but for the same reason we see how much may be expected from this source, if the natural strength should be deficient, or by repeated efforts and straining should be so far reduced as to be unable to expel the infant, though it be well situated, of a proper

(a) Sydenh. Epist. Resp. oper. p. 272.

ſize, and the parts alſo of a natural ſtructure; in this caſe an emetic, which acts quickly and powerfully and may ſoon be reſtrained, often happily finiſhes the buſineſs, without raiſing any diſturbance, heat, or fever in the ſyſtem; which uſually follow the uſe of aromatics, eſpecially when joined with ardent ſpirits and other things of the like kind, which old women, according to cuſtom, exhibit with a liberal hand, and generally to the great detriment of the patient.

There are other affections of the uterus which may be relieved by this remedy; but although they have fixed their ultimate ſeat in this viſcus, yet they ſpread diſorder through the whole body, and are to be conſidered as cauſes of a general effect: the fomes therefore, are to be removed from the general habit, before the uterus can return to its former healthy ſtate. How far an emetic may be ſuited to this intention of cure, will be ſhewn hereafter.

Having thus conſidered the faults of the principal viſcera ſeparately, at leaſt thoſe which admit of relief from mechanical remedies, we muſt now conſider the effects which reſpect the whole body, and enquire into the general changes produced by ſo great an operation.

49. Beſides the large trunks of veſſels which paſs through the belly, and, bringing the blood from the extremities, carry it to various viſcera, and, being formed into one, conſtitute the origin of the *vena portarum*; there are ſtill thouſands of

of their branches, which creep through the viscera, and, making their way by various turnings, form many beautiful plexus of vessels, through which the natural fluids are constantly propelled. By vomiting, the situation, magnitude, and figure of the vessels, are every moment changed, so that an action arises altogether similar to the action of the lungs. But if we advert to the number of the abdominal vessels, and to the force applied to them and their contents by the efforts of vomiting, we shall see that this action far exceeds the powers and action of the lungs, and at this very time also, they act much more strongly than usual. We may justly conclude, therefore, that every part of sanguification is exceedingly promoted by it; that is, a union, densation, attrition, solution, and mixture of the fluids with the blood, is excellently promoted. These effects are also assisted by the increased velocity of the blood; for the arteries are compressed, as well those which go to the belly, as those dispersed to the limbs. Most of the muscles grow rigid with a slighter kind of tetanus in the very act of vomiting, as will easily appear to any one looking on a person in this situation. The muscles of the breast and shoulders support and fix the ribs; the arms stretched out, support the body, by which the muscles of the back are assisted in keeping the body bent forward in a convenient posture; the legs become stiff, and the patient, like an immoveable statue, waits with open mouth the attack of sickness and retch-

ing. The blood-vessels, therefore, which accompany the muscles, are equally subject to this pressure as those of the abdomen, and are affected with it in like manner: the diameter of the arteries is diminished, and the compressed fluid rushes out where a passage opens for it; the column urging on behind, prohibits a reflux, it must necessarily therefore proceed forward, and sooner reaches the veins. The coats of these are less rigid and more easily yield to external force; the same effect therefore takes place here, namely, the blood is compressed and pushed forward: the frequent valves forbid its return; it urges on its way therefore with greater velocity, and reaches the heart in a fuller stream; but, driven from hence with frequent repeated strokes, it hastens on to perform the usual rounds. From these things we clearly learn, 1. That sanguification is made better: 2. That the secretions are increased: 3. That the solids acquire new strength: 4. Lastly, That the momentum of the blood is increased, and, impediments being removed, the circulation becomes more free. But from these principles it will easily appear, what diseases τῆς μοχλείας δεόμενοι, *require mechanical motion* as a remedy, and why so many and such great effects are produced by vomiting, both on the fluids and solids. It will not, however, be foreign to our purpose, to shew their use in a few of these kinds of diseases.

50. The winter being past, the solids, before stiffened by the piercing frost, are again relaxed; but

but the fluids, propelled with less force by the enervated vessels, grow thick by the vernal heat, and on any slight occasion stagnate in the extreme vessels, the solids failing of their usual strength: the humidity of the air accumulates the sordes, and the weak body, loaded with fæces, becomes liable to many disorders. Nature, perhaps, brings on a benign intermittent, which might soon shake off the troublesome load, and restore the body to health and vigour, if left to itself, and not disturbed in its course. But the complaining patient is urgent; he abuses the physician with hard speeches, and despising his advice, perhaps procures from some old woman an untimely relief, often accompanied with a thousand mischiefs. An emetic seconds the attempts of nature; and, if it does not radically extirpate the complaint, yet it expedites a safe way to health, (§ 32) and if repeated is useful. An autumnal intermittent seems no less to require the help of an emetic, as well to evacuate the foulness of the *primæ viæ*, as to correct the disorders which have a deeper root in the system.

51. Nearly allied to this, is a slow continued fever, greater in degree, arising perhaps from the same causes, and sometimes raging about the same time: the morbid matter seems more immoveable, and which can by no means be subdued or expelled by the slow work of nature. Hence there is no remission; yet the disease is not so violent, nor the heat extreme. Venesection

tion evacuates, with the blood, the strength also, which in this species of fever is already too low. A gentle laxative is of little use, and a stronger purgative debilitates. 'Tis the business of the physician to favour and promote what nature has begun. We must therefore support the fever, that it may finish its attempts (otherwise too weak and useless) and concoct the crude, and expel the concocted matter, that it may not be hurtful to the body. "If there be coldness and torpor," says Celsus *(a)*, "and restlessness, it will not be improper to give in the fever three or four cups of "the *mulsum (b)*, or diluted wine mixed with the "food; for by this means the fever is increased, a "greater heat arises, and removes the forementioned symptoms, gives hope of a remission, "and in that remission of a cure." But emetics perform all this. There is a strong force accelerating the motion of the spirits, (§ 18, 19); the sordes lodged in the bowels are evacuated, (§ 30); if the abdominal viscera are clogged with viscid matter, it is corrected and subdued, (§ 39); and lastly, the motion of the blood is quickened, and the thin secretions, (§ 49, n. 2, 3, 4,) are increased, especially those by the skin and surface of the body. Perhaps there is no method of promoting sweat, more efficacious or useful, than after an emetic has been exhibited; for not only a copious sweat is excited during

(a) Cels. med. lib. 3. cap. 9.
(b) Water and honey boiled together.

the

the operation, but the attenuated fluids are propelled ſo forcibly to the ſurface of the body, (§ 49), that, the obſtructions being removed which block the cutaneous orifices, the humours determined hither ruſh out in a full ſtream. And here opiates are of uſe, which practitioners moſt judiciouſly adviſe after an emetic. Vomiting likewiſe cleanſes the ſquallid foulneſs of the *primæ viæ*, and prevents the viſcera from being injured when an hydrogogue is adminiſtered, and the fomes diſperſed through the body.

52. The ſame doctrine points out the great uſe of an emetic in a thin acrid catarrh, in the humoral aſthma, and other diſorders of the like kind, ariſing from catching cold; when the matter of perſpiration is retained, and ſo far loads the veſſels with an inactive fluid, that all the functions ſuffer by it; when the ſenſes grow dull with a ſtupid heavineſs, and one would almoſt ſay that the body is literally heavier than uſual; and laſtly, when the diſtended veſſels become painful, and the ſenſible parts are hurt; when theſe, and other like ſymptoms appear, a remedy muſt be exhibited, which may open the pores, expel the ſuperfluous humours, and reſtore the body to its uſual activity. An emetic is of great uſe for theſe purpoſes, in whatever part of the body the complaint, ariſing from theſe cauſes, may be ſituated. If we ſuppoſe that the glands, and other veſſels about the fauces and neck, ſo much abound with a watery humour, that there are ſigns of an approaching defluxion,

mechanical

mechanical force will be of use; for the face growing red and swelling, the eyes sparkling and filled with tears, the nostrils moistened with their usual fluid, and the glands of the mouth and fauces pouring out a rivulet of saliva and mucus; all which constantly accompany the efforts of vomiting; clearly demonstrate with what force the blood makes towards these passages, and the greatness of the attack on the obstructed vessels. For as the bony canals do not yield, and as the great arch and obliquity of ascent of the vertebral and carotid canals greatly break the force of the blood in its approach to the brain; so the tender flexible texture of it is in less danger from an emetic, the impetus being mostly determined outward, the increased force inwardly being but small. Hence partly, and from its stimulant and evacuating virtue, the reason will appear why a vomit is of so much use in a vertigo, hemicrania, and other like diseases; why it has sometimes been so useful in the epilepsy of old people, as writers of observation acknowledge: "I have known," says Hoffmann *(a)* "an inveterate epilepsy, which "had afflicted the patient twenty years, cured "by the use of emetics and specific anti-epilep-"tics, taken from the animal kingdom." Nor am I unacquainted with similar histories; but the prescribed limits of my work forbid the relation of them.

53. The same reason renders it less necessary

(a) Hoff. Dissert. decad. 1. p. 204.

distinctly to relate their use in the small-pox; not only as they evacuate and turn the future mischief to some other part, (§ 30) but also on account of other effects which they possess, (§ 49) and the excellent changes which arise from them. Let us suppose the skin covered with pustules; and the small perspiratory vessels so compressed, that the usual strength cannot push forward the hard compacted matter: in this case the bulk of the contents of the vessels is increased; a febrile heat is so kindled in the interior parts, that the internal exhalent organs become dried, or otherwise so obstructed that they cannot perform their functions. On both accounts a fluid is retained, which has already undergone too long a circulation, and which by a longer delay would be productive of the worst effects; for too much heat produces acrimony, whence a stimulus is applied to the nervous parts; hence also arise febrile heat and thirst, perhaps delirium may supervene: from the increased bulk of the fluids anxiety infests the præcordia; the thick matter made fluid by heat is coagulated, and rendered more unfit for excretion through the organs which nature often points out for it, that is the fauces or intestines. These disorders require, in the exhalent vessels of both places, a resolution and evacuation of the coagulated matter, and fluidity to be produced in the rest, but so that the fever be no more increased than can be safely restrained by an opiate. Whoever recollects what has been said (§ 13, 18, 39, 49) concerning

cerning the effects of emetics both on the fluids and solids, will foresee that they are not improper remedies in this case, nay, perhaps the most proper. Sydenham, treating of acute fevers, says *(a)*, "When I have sometimes happened carefully to "examine the matter thrown up by a vomit, "and have found it neither remarkable in quan- "tity, nor of very bad quality, I have admired "that the patients have received so much relief "from it; for, the vomiting being over, the se- "vere symptoms, (viz. the nausea, anxiety, rest- "lessnèss, deep sighs, blackness of the tongue, "&c.) which tormented the patient, and terri- "fied the by-standers, were usually mitigated "and went off, leaving the rest of the disease "tolerable." But from what has been said, it appears that the thick fluids are dissolved, the obstructed canals made free and open, the whole body, dried and parched up, becomes moist, and the hurtful matters are expelled; it is no wonder therefore, that such sudden relief should happen from it.

54. The advantages received from emetics in acute diseases being thus cursorily related, the way is paved to chronic complaints; in which the opportunity of giving relief is not so fleeting, nor experience so fallacious, though judgment and discrimination are sufficiently difficult. Vomits seem more especially opposed to those classes of diseases which have their origin and seat in the

(a) Sydenh. oper. § 1. cap. 4.

stomach,

stomach, or viscera situated near it, which is the case with almost all chronic complaints; for the disorders arising from these parts are quickly dispersed through the system, and the effects of lost or broken health are returned on these viscera. This is no where more evident than in those diseases which are accompanied with loss of reason, and which happen from bad food, or some error in diet, as their proximate cause; for though they arise from passions of the mind, evacuations, or other remote causes, yet an improper method of living often constitutes the proximate cause. The innumerable branches of nerves sent off to the stomach, do not serve either for nutrition or motion only, but rather to promote chylification. The animal spirits, therefore, being dispersed in too great a quantity, one of the causes of health is lost; that is, the instruments destined to convert the usual quantity of food into the nature of our body, become unequal to the task; but the usual quantity being taken into the stomach, there necessarily arises indigestion, the source of other diseases. This is most frequently the origin of the hypochondriac affection, and sometimes of other degrees of defective reason, from the slightest to the highest pitch of madness. The phænomena of this disease shew that the fault is principally lodged in the fluids, and consists in too great a thickness of them, or a dissipation of the most volatile moveable parts---These are the animal spirits, the vaporose halitus of the blood, and lastly

laſtly the watery elements of it; the greater or leſs waſte of which makes the diſeaſe milder or more ſevere; whilſt the blood paſſes through various degrees of ſpiſſitude, till at length it degenerates into a true bile, called by the antients *atra bilis*. What is known of the nature of this diſeaſe, is chiefly owing to chemiſtry; by the help of which, in this, as in many other diſorders, many phænomena otherwiſe unintelligible, become evident. From the chemical analyſis of the blood it appears, that the watery parts being evaporated, there remain a ſaline, an oily, and an earthy matter, variouſly combined together, but little fit for the functions of health, as being thicker and lighter than healthy blood. Chemiſtry likewiſe demonſtrates, by experiments to be depended upon, that oil, ſalt, and earth, united together, contain more air than water mixed with the reſt. The human calculus is an example of this; therefore the ſolids are too powerful for the fluids, circulate them too quickly, and the waſte of the thinner part is increaſed, whilſt the reſiduum growing thick, refuſes an intimate mixture with diluents. The *ingeſta*, not ſufficiently concocted, add to the diſeaſe, obſtruct the ſoft viſcera, and weaken or deſtroy their action. Hence ariſe obſtructions, tumours, and pains of the ſpleen, liver, and hypochondria. Health requires a reſtoration of fluidity and miſcibility to the viſcid part: this is obtained by diluents, ſaponaceous ſubſtances, and attrition. But the nature of the diſeaſe, as above explained,

ſhews

ſhews that diluents alone are of little uſe; ſaponaceous ſubſtances alone, though very efficacious, are ſeldom ſufficient; but theſe aided by attrition and heat exert their whole force, as appears from chemiſtry. Laſtly, attrition in this diſeaſe is ſeldom increaſed by the common ſtimulants, which are often found hurtful. It is true, they increaſe the celerity of the blood, but they increaſe at the ſame time its rarefaction. But it is found that attrition is in proportion to the celerity, ſolidity, and compreſſion: if therefore the ratio of increaſed rarefaction, exceed the ratio of increaſed celerity, not only the attrition will not be increaſed, but on the contrary it will be diminiſhed. A remedy therefore is wanted which may increaſe the celerity of the blood, and at the ſame time reſtrain its rarefaction. It eaſily appears, from what has been ſaid, that ſuch a remedy is found in the effort of vomiting.---Hence appears, by the bye, the utility of immerſion in cold water.

55. A dropſy ſeems diametrically oppoſite to this diſeaſe; in which a ſerous lymph drowns the viſcera, and the pallid blood deforms the body with a diſagreeable colour, and ſhews that water abounds, and that, by a contrary fault, the oily, earthy, and ſaline parts are deficient.

A pituitous diſpoſition having ariſen in the fluids (which may happen from various cauſes, ſome of which the poet *(a)* has not unaptly deſcribed,

(a) Sammonicus.

Corrupti jecoris vitio vel ſplenis, acerbus
Creſcit hydrops: aut cum ſiccatæ febre medullæ
Atque avidæ fauces gelidum traxêre liquorem:
Tum lympha intercus vitio gliſcente tumeſcit,
Secernens miſeram proprio de viſcere pellem.)

immediately the ſolids are ſo debilitated that they are ſcarce able to propel the torpid fluids. Hence ſtagnation in the lateral veſſels, and languor of the functions. The ſerum is daily accumulated, ſwells, injures the neighbouring parts, and the cauſes of the diſeaſe are continually renewed. If this happens in one veſſel only, an hydatis is formed: if κατὰ φλέβας, *along the veins*, or in the tunica cellularis diſperſed through the body, a leucophlegmatia takes place: if a ruptured veſſel pour its contents into ſome cavity, a local dropſy is produced: if, laſtly, (which is often one cauſe of the diſeaſe) the action of the abſorbent veins be debilitated, either from obſtruction produced in them, or from mere languor and inertia of the ſolids, whilſt the ſmall arteries with open mouths perform their office, and pour their fluid from the drained body without end into a cavity; in this caſe the fluid being continually accumulated grows thick, and in a ſhort time renders the veſſels of all kinds unfit for their office, and produces a topical dropſy. In the cure of this diſeaſe the primary cauſe muſt be diminiſhed or removed; attenuants, evacuants, exſiccants, and roborants of every order, muſt be uſed, that the humid load

may

may be removed, the water leſſened, and the veſſels ſo far reſtored to their ſtrength, that they may perform their proper office, and the native healthy ſtate of the fluids be renewed. To do all this, we find many remedies among practical writers. I know not how many celebrated ſpecifics are mentioned by them which will carry off the diſeaſe almoſt at one ſtroke, if we are to give credit to their promiſes. Others are diſpleaſed with this ſhort way of doing things, and relate a pompous farrago of remedies, and almoſt bury the patient under a heap of medicines. The practice of both is to be avoided; nor is the cure wholly to be left to emetics, nor yet attempted without them; ſeeing they ſhorten the labour, and perform in a compendious manner what would otherwiſe require many helps. Antihydropic remedies before mentioned, ſeem to produce their effect by exciting motion and attrition of the fluids, and by carrying off the exuberant lymph. A ſtrong effort of vomiting often repeated, promotes all theſe at once. It opens the obſtructed veſſels, breaks down and propels the thick and ſtagnant fluids, dries up the humid parts, increaſes the watery ſecretions, renders compact the diſſolved blood, and diſſolves the viſcid, carries the blood with greater velocity to the extremities, and promotes ſweat. It alſo exerts a ſtrong action on the tumefied abdomen; and, when the diſeaſe is wholly ſeated here and recent, the viſcera ſound, and the body not very old, the cure is ſafely finiſhed by

repeated vomits with proper regimen and moderate exerciſe; except in perſons, "who being "their own maſters, cannot ſo eaſily be gover- "ned, as thoſe who recover by the benefit of "being controuled *(a)*." In the advanced ſtage of the dropſy, an emetic ſeems to be of no ſmall uſe. This is proved by a caſe mentioned by Foreſtus *(b)*, of a dropſical perſon, "ſwelled "in his belly, hands, feet and face; left by the "phyſicians, and at length deſpairing of a cure, "he went to the ſea ſhore, and in a ſmall veſſel "went ſome diſtance on the ſea; by which a "vomiting being promoted, and afterwards "uſing exerciſe, he was reſtored to health." I might here adduce the ſuffrage of Sydenham, who, in his elegant tract on the dropſy, ſupports his opinion of their uſefulneſs by many examples confirmed by repeated obſervation: but the more advanced in the art know well the elegant words of the author, and the leſs advanced are chearfully recommended to the book itſelf, in the reading of which,

------ *ſi propiùs ſtes*
Te capiet magis; ------ et
------ *decies repetita placebit.*

------ *if cloſer thou attend*
It will ſtrike thee the more; ------ *and*
------ *a thouſand times repeated will pleaſe thee.*

(a) Celſ. Medicin. lib. iii. cap. 21.
(b) Obſerv. lib. xix. obſ. 33.

But

But in this diſeaſe the cure is not to be committed to mechanical action, unleſs the viſcera, and other circumſtances, are as mentioned in paragraph forty-fourth.

56. From what has hitherto been ſaid, it will clearly appear what effects may be expected from the action of emetics in diſeaſes ariſing from a ſerous colluvies. Their uſe alſo will appear in the rickets, a diſeaſe troubleſome to children of both ſexes, difficult to remove, and frequent. It is commonly produced by ſome fault ariſing in the abdomen, and propagated as far as the medulla; by ſlow degrees it digs into the very pillars of the body, and renders the hardeſt and almoſt inflexible bones too eaſy to be bent. The origin and progreſs of the diſeaſe, the curatory indications, and alſo the manner by which it may be relieved by repeated vomits, will clearly appear from the following obſervations *(a)*.

1. The hardeſt bones in the body were once a moveable jelly, membranes or cartilages; which by degrees, growing hard through various degrees of ſolidity, at length become rigid bones.

2. There are two cauſes of this induration; viz. a ſecretion of a bony matter from the blood, and a firm appoſition of the matter ſecreted, or a ſtrong compreſſion of the particles one to another. Theſe are the effects of a compleat vi-

(a) Vide Alex. Monr. Anatomy of the Bones, p. 34.

gour of the living powers, and the action of the neighbouring incumbent muſcles. Therefore,

3. If the blood be not ſufficiently ſtored with proper particles for the ſtructure of the bones, a leſs ſecretion will be made, and leſs fit for the purpoſe of oſſification. Moreover, if muſcular action be deficient, and the ſtrength languid, another cauſe of oſſification is wanting. Hence, therefore,

4. It appears, that thoſe conditions which can produce the rachitis, are all of that kind which uſually deprave chylification and ſanguification. Particular regard, therefore, muſt be had to theſe, and that kind of medicine be choſen, which may correct and remove the fault in its very formation, (§ 18. 27. 39); may mend the hurtful effects of it, beginning to appear in other places; and in the beſt manner relieve the defect of impetus and motion in the muſcles, (§ 49.) Purgatives indeed happily carry off the ſaburra of the viſcera; but if they are too ſtrong, they debilitate much, and leave a thick but vapid matter behind, more apt to produce obſtructions; and the ſolids, already too weak, they weaken farther. Emetics powerfully purge the viſcera, are not ſo hurtful to the vital powers, and ſtrengthen the ſolids; eſpecially if an accurate regimen be obſerved, if the body be often immerſed in cold water, and laſtly, if the ſymptoms ariſing be ſometimes moderated by ſpecifics.

57. Whether

57. Whether a vomit be useful in attacks of the gout, to whom, when, and how often it ought to be exhibited, is not easy to determine. Those, whose authority I very much regard above most others, altogether dissuade from their use in the paroxysms, except nausea, vomiting, and other signs of the stomach being loaded with sordes, be urgent, and then they only admit the lenient emetics. But other physicians, *(a)* of no small note, are of an opposite opinion; and one *(b)* asserts, that "he has seen the "usual attacks of the gout always rendered "more mild, when the *prima regio* has been "cleared of sordes, immediately at the com-"mencement of the paroxysm, by a gentle "emetic, either alone, or joined with a laxa-"tive." Who is sufficient to decide these differences? As for me, dismissing these facts, I shall endeavour to demonstrate, in few words, the use of emetics in a different stage of the same disease; that is, between the paroxysms, in order to prevent the future. The acrid matter stagnating in the very fine passages, and exciting excruciating pains, is expelled after a gouty paroxysm (if the cure be rightly conducted, nor the efforts of nature checked by the untimely use of some external or internal medicine) a gentle sweat moistens the part affected; or, if the disease be of a still worse kind,

(a) Vide Dr. Cheyne's Essay on the Gout, p. 77, &c.
(b) Hoffm. Diss. Decad. i. p. 411.

having a deeper ſeat in the body, and producing tophi, an alleviation and remiſſion of all the ſymptoms ſucceeding, ſhew the evacuation to have been critical: therefore a return of the fomes of the diſeaſe into the blood, and upon the parts appointed for the more noble functions of life, is by no means to be feared; but the reſt of the diſeaſe is to be removed in the manner of any other more ſevere chronic complaint. If the fluids are depraved, they muſt be purged by alterants; the weak ſolids muſt be ſtrengthened, the powers of the whole body be renewed, and the root of the cruel diſeaſe, as far as art can effect it, be cut up. For theſe purpoſes the medicina gymnaſtica, *or exerciſe*, is extremely uſeful; which, above many other helps, revives the weakened limbs with freſh vigour. Riding on horſeback, or in a carriage, running, &c. are excellent helps. But how often does the unfriendly ſeaſon of the year prevent theſe exerciſes? In the winter or ſpring the gout commonly abates, but is yet worſe if it intermits in the autumn. For the air heavy and cold, wholly prevents going abroad; and the diſtorted joints, yet lame with the late pains, do but ill admit of ſtanding long on the feet, or that the body be tortured with any kind of motion in-doors, or in ſome covered walk. Friction, in reality, does nothing more than ſlightly clean the external parts; it evacuates no pituitous matter from the viſcera, which, for want of motion, neceſſarily begins to be troubleſome. Nor are there wanting

ing to patients flattering companions, who know not how to give a dearer pledge of friendſhip, than by ruining their own health by drinking, and attempting the ruin of a man recovering from diſeaſe, whilſt in words they wiſh him his uſual health, but in reality take the means to deſtroy it. For theſe and the like reaſons, an emetic is almoſt always very neceſſary to theſe convaleſcents; nor will it be difficult to collect from what has been ſaid, in what manner it ſupplies the place of vigorous exerciſe. It appears alſo in what manner vomits aſſiſt the animal functions, how they concoct the thick humours, and laſtly, more or leſs anſwer to every ſingle indication. Nor are diſcerning practitioners afraid, twice a month, or ſometimes oftener, to order a vomit to perſons in this ſituation.---Having therefore, taken a view of their uſe in moſt chronic diſeaſes, we intend ſlightly to run over the complaints which are troubleſome only to the tender ſex.

58. Not only the manner of living, but almoſt the very vital ſtamina, ſeem to have given a more ſoft lax temperament to women than to men; unleſs a harder lot in life may have imparted to them an unnatural one, and an healthy mind in a healthy body, hardened with ſevere labour, ſhould have given them a firmneſs altogether imitating muſcular force. There is however a ſtage of life in which the condition of women, from the leaſt error, becomes liable to the worſt miſchiefs; that is, at the time the difference

difference of the ſexes begins to appear, which is at or about the fifteenth year of their age: for till this time, in a medical ſenſe, they are but one and the ſame genus or kind. But in what they differ, why, and what are the phyſical cauſes of this difference, is not neceſſary at preſent to explain, having been largely treated of by others. But a brief recital of theſe diſeaſes, as it may ſerve for a more clear explication of this argument, ſeems not improper to our purpoſe.

1. The terminus of increaſing bulk approaching, the ſame organs which have hitherto prepared nouriſhment for the body, ſtill continue to prepare more than nutrition alone requires. The ſuperabundant blood therefore now paſſes off periodically by the uterine veſſels. If it be detained too long in the body, through weakneſs of the veſſels, or by an obſtructed paſſage, plethora is added to plethora, and the diſeaſes of the ſex preſently appear.

2. If a watery diſſolved or acrid blood pervade the uterus, and momentum or force be wanting to open the mouths of the veſſels ſo far that they may depoſit the red blood, it then paſſes into the lateral veſſels, is poured into the glands every where placed in the cavity of the uterus, and becomes thick: at length there paſſes off a viſcid fluid, different in colour, ſometimes white (from which it has been called *fluor albus*) or whitiſh, ſcarce tinging a cloth; ſometimes yellowiſh, greeniſh, blackiſh, and affected

with every colour between theſe; ſometimes it paſſes off without fetor, ſometimes it ſmells; ſometimes it is mild, generally at firſt, but the diſeaſe continuing long it becomes more acrid, deeper coloured, and more fetid. The opening glands ſeparate and throw off the thin humours of all kinds; amongſt which are the nutritious, which ought to have given vigour to the ſolids, and momentum to the fluids. Hence ſtrength declines daily, the limbs loſe their power, digeſtion fails, a more indelible faulty ſtate corrupts the fluids, and a diſeaſe creeps into the whole œconomy, than which (I have heard the ſkilful aſſert it) there is none among the whole troop of chronic complaints more cruel to the ſex, more difficult to be cured, or more fatal in its effects; for the very inſtruments fail, by the help of which the other parts ought to be repaired, and the ſeat of the diſeaſe is in a viſcus, to which, of all others, it is moſt difficult to apply a remedy. 'Tis true, it does not ſoon fail, but when once affected, it preſerves its vitiated ſtate long; becauſe it is a part, ſays Foreſtus *(a)*, " which readily receives " the excrementitious particles of other parts, " both on account of its inferior ſituation, and " the multitude of veins running to it, and " alſo on account of the uſual natural purga- " tion." Add to this, that its ſolid vaſcular ſtructure does not eaſily yield to medicines, the

(a) Foreſt. Obſ. lib. 28. obſ. 21.

powers

powers of which are weakened by a long circuit before they reach it. And after the disposition of the blood has been made better, the lax texture of the glands obstinately opposes a cure, and those medicines which are opposed to this softness, constringe the orifices of the arteries, and render menstruation more difficult. Native laxity, a bad diet, an inactive and luxurious life, generally produce this disease: for, as the same Forestus has observed, *country-women seem seldom affected with it.* These circumstances also often precede a suppression of the uterine flux *(a)*. Such remedies, therefore, must be applied in these cases, as are opposed to diseases arising from causes of this kind; not omitting repeated vomits: for, besides the effects hitherto mentioned, of cleansing the stomach, stimulating the solids, and producing a wonderful attrition in the blood, they also propel it with such force to the uterus, that we find examples *(b)* where this mechanical force alone, in retarded menses, has produced an instant flow. And, unless the patient be *hard to vomit*, or can ill bear the action of an emetic, no less advantages are to be expected from it in the *fluor albus*, than in most other chronic diseases. But it often happens that patients in this disease are fatigued with the least motion; whence they receive more harm than good from

(a) Oper. Friend. page 67. 80.

(b) Plater. Obs. Med. p. 191.—Hildan. Obs. cent. 3. obs. 58.

a vomit.

a vomit. This, therefore, is firſt to be conſidered, before emetics be given to patients of this kind.

59. But there is nothing perfect and happy in every reſpect: emetics have their advantages, and alſo their diſadvantages; nor are theſe leſs to be feared than thoſe to be deſired, if by chance the medicine be given improperly. But the unſucceſsful events of a remedy no leſs ſhew the utility of it, than if the moſt deſirable effects had taken place from it; they demonſtrate its power, and prove its efficacy, whilſt they convict the artiſt of unſkilfulneſs and temerity; nor is the medicine to be accuſed of the death of a man, but the hand which improperly or untimely adminiſters it. And though, from the doctrine of emetics already delivered, it may appear clear to the ſkilful, in what caſes they may be uſeful, and in what hurtful, yet it will not be improper to cloſe the preſent diſſertation with a ſhort account of the diſeaſes in which a vomit is eſpecially to be avoided.

1. The natural ſtructure of the body is a reaſon with ſome writers *(a)* why emetics ſhould not be given to ſome perſons; thoſe of a ſpare thin habit, long neck, narrow breaſt, and hard to vomit; and thoſe ſubject to ſpitting of blood, fainting, or a troubleſome cough; have been excuſed from emetics: but perſons of a contrary temperament have often, by the advice of phy-

(a) Vid. Fallop. de purgant. p. 81.

ſicians,

ſicians, experienced their ſalutary effects. In the uſe of the ſtronger emetics theſe circumſtances certainly ought to be conſidered, leſt perhaps we ſhould fall under the cenſure of temerity or incaution; nor ought they wholly to be omitted in ordering a gentle vomit. Idioſyncraſia, or a peculiar diſlike to ſome things, known to the patient from experience, but not diſcoverable by the phyſician, unleſs he has learned it from him, may forbid the uſe of this or that medicine, which otherwiſe, given by one not knowing it, would produce many miſchiefs.

2. In inflammatory diſeaſes, when the blood is polluted with a parched lentor, and, unfit to paſs through the extremities of the arteries, ſtagnates, and muſt not be urged by force; as in acute fevers, topical inflammations, the pleuriſy, frenzy, inflammation of the liver, and the like; the vital powers muſt rather be diminiſhed than increaſed; therefore, the acceſſion over, and violent pain urgent, an emetic will not be ſafe.

3. Nor, if the action called tonic, of any viſcus or part be much injured, or if the juſt force by which the ſolids ought to re-act on the fluids be much leſſened, ought we to try the mechanical force of a ſtrong emetic, before regard be had to the part, whether it can bear to advantage an attack of ſuch great violence, or whether it will not ſuffer a greater inconvenience from it. For example; in a dropſy of the belly an emetic carries off the water, but for a time at leaſt it increaſes the ſwelling.

4. The

4. The action of emetics is certainly great on the lungs, because in the effort of vomiting, an unusual quantity of blood is passed suddenly through them, by which the vessels are distended, the vesicles compressed, on which the air retained within re-acting strongly, renders the pressure much more strong and powerful; and if the gaping vessels have before let out the blood, the small wounds being almost certainly enlarged, will increase the hæmoptoë. In an incipient hæmoptoë also, produced by some external cause, while the blood is yet bland, nor contaminated with any sordid corruption, we can scarce have recourse to an emetic; by which the latent cruor, corrupted by stagnation, is expelled the vesicles of the lungs, and may increase the disease otherwise not very dangerous. Emetics, therefore, can scarcely be given to persons affected with pulmonary complaints, unless where an inundation of pus has overflowed the lungs, and death otherwise inevitable, be threatened from suffocation.

5. Lastly, we must carefully abstain from their use in those diseases which are caused by much thick blood, a copious very tough pituitous matter almost immoveable, or any other matter of the like kind, afflicting the brain and origin of the nerves, as in the more severe kind of apoplexy, paraplegy, hemiplegy, in the lethargy, carus, and the like; for commonly they fix the disease deeper, and in a very strong operation they destroy life. It is scarce necessary to dissuade

diſſuade from the uſe of emetics when there is yet danger of an hæmorrhage after a limb has been wounded or cut off, though ſome ſymptoms might ſeem to point them out as neceſſary; or laſtly, when by large abſceſſes, or by any other opening, a great ſhock being given to the ſyſtem, the patient would bleed to death.

THE

THE following Eſſays on the Weather and Diſeaſes of London in 1751, *and the three ſubſequent years, were originally inſerted in the Gentleman's Magazine, commencing with the* 21*ſt volume. They were deemed worthy of ſelection here, not merely as bloſſoms preſaging fruit, but as ripened fruit itſelf, fit for immediate ſervice. It is, indeed, to be regretted, that ſuch periodical communications were not longer continued, in a city, which affords, undoubtedly, the moſt multifarious obſervation.*

Editor.

ON WEATHER AND DISEASES.

Mr. URBAN,

IF the incloſed account of the weather ſhould appear to be not unworthy of a place in the *Magazine*, nor be diſapproved of by the ingenious part of the faculty, it will induce me to proceed in furniſhing ſome ſhort remarks of the like nature once a month, whilſt health and leiſure permit. I ſhall ſay nothing at preſent of my motives to this eſſay, or inſiſt upon its utility. I ſhall only obſerve, that the barometer I uſe is a good one; and the thermometer is graduated by Fahrenheit's ſcale, and made by a workman of eſtabliſhed character: it is ſuſpended at about two inches diſtance from the wainſcot, in a room where no fire is ever kept, nor does the ſun ſhine into any part of it above two hours in a day, nor then within ſome yards of the thermometer; above it is a wide ſtaircaſe, and a door opens out of the room where it is placed into an airy court almoſt every half hour in the day.

The direction of the wind is not always ſo exactly put down as I could wiſh, from the reſtiff-

neſs of the neighbouring vanes; nor is its force, or the meaſure of rain, determined any other way than by conjectural eſtimation.

I am, &c.

Of the Weather in April 1751.

The temperature of the air in reſpect to heat and cold, during the whole of this month, hath been ſurprizingly equal, notwithſtanding the wind has blown from almoſt every point of the compaſs. The loweſt degree to which the mercury in the thermometer fell was 43, the 2d inſt. with a clear cold wind from the N.E; the higheſt it aroſe to was 57, the 24th, the weather fair, warm, ſerene, and the wind ſouth: ſo that during that period the weather varied only 14 degrees, from one extreme to the other, and this in ſo ſlow a manner, that the mercury did not riſe or fall quite 4 degrees in any day of the time.

The motion of the quickſilver in the barometer, has been ſtill more confined. It ſtood the 26th of laſt month at 29 inches one tenth, the wind weſterly, and much rain; and roſe by degrees to 30, the 8th inſt. the weather moderate, fair, clear, wind N.E. this was its higheſt aſcent; the extreme variation 9 tenths. Its greateſt riſe on one day was the 26th, when it roſe from 29.1, to 29.4, the wind weſterly and high. Its greateſt fall was 3 tenths, on the 13th, the wind changing from north to ſouth; an equality which would ſcarce have been expected.

Great

Great quantities of rain have fallen during this month, ſometimes in heavy ſudden ſhowers, ſometimes in long-continuing rains; and ſuch has been the tendency to wet, that we have had ſhowers frequently with a north-eaſt wind. The 15th, 16th, 17th, and 18th were fair and moſtly clear: beſides this ſhort ſeaſon of fine weather, it has ſcarcely been fair 48 hours together, the whole month. The wind was ſome days pretty high and ſtormy; there was one ſudden ſtorm of hail the 21ſt, and ſome froſty mornings about the ſame time.

The whole of the month may be ſaid to have been wet, though moderate; and rather cold for the ſeaſon, than remarkable for any thing elſe.

With reſpect to diſeaſes, the only one that I have ſeen that has looked like an epidemic, is an inſidious ſpecies of peripneumony. The ſick complain firſt of chillneſs, ſhivering, and general pains, frequently of the limbs, then of ſome part about the thorax, but this laſt never acute, not often with a cough, and ſometimes without much difficulty of breathing. They frequently complain of pain upon ſneezing, coughing, or even ſwallowing, on one ſide of the neck, juſt above the place where the middle of the maſtoid muſcle takes its riſe from the clavicle. This is often acute, and where it is ſo, from an inſtance or two I have ſeen, ſeems to afford a bad prognoſtic. The patients can lie eaſy in one poſture, which is commonly upon the back, but not on either ſide. They have, or affect to ſhew, great

compoſure and eaſe, which impoſes on thoſe about them, till they are ſuddenly alarmed with ſome unexpected alteration, which carries the patient off in a ſhort time.

The blood is commonly ſizy; the urine crude or turbid, without a fair ſediment; the pulſe quick, ſmall, at length weak, and with a remarkable jerk; the tongue moiſt, and drinking is rather fatiguing than pleaſant. Early bleeding, gentle antiphlogiſtic purges of ſal cathart. and manna in the pectoral decoction; cupping on the ſide, with bliſters, mild diaphoretics, and pectorals intermixed, have in ſome caſes been ſucceſsful.

As to conſumptions, they are rather endemic than epidemic here, though this month moſt commonly is fatal to many who are expoſed to them.

Should this imperfect eſſay be favourably received, the author will endeavour to continue it with care and aſſiduity.

Obſervations on the Weather, &c. in May 1751.

The weather continued cold, dark, and rainy, as in the preceding month, till the 18th of the preſent, in which time it was ſeldom fair above 24 hours together; very often it rained, without intermiſſion, great part of the day and night, with the wind varying from S.E. to S.W. or N.W. About the 18th the weather became

became fair and clear, yet cool, the wind moſtly N. or N.E. with a few very ſlight ſhowers.

The mercury in the barometer kept about 29 6 tenths at a medium: during the firſt part of the month it ſunk to 29.2, the 3d inſt. with much rain, wind S.W. and roſe by ſlow advances by the 18th to 30.4. where it continued ſeveral days, wind N. and N.E.

The variations in reſpect to heat and cold, have been more conſiderable. The mercury in the thermometer continued almoſt ſtationary between 49 and 58, till the 9th, when it ſunk from 52 to 47, viz. 5 deg. (its greateſt variation in 24 hours, any time this month) the wind N.W. with a pretty ſharp froſt, which was felt in many diſtant places in the country. The north-weſt parts of Yorkſhire had much ſnow, the earth was frozen hard, and thick ice was on the water. From this time the weather became ſomewhat warmer, the mercury ſometimes riſing to 58, and on the 21ſt and 22d at noon to 64, the air ſerene and vernal.

The ſame diſeaſes continued during the rainy ſeaſon; intermittents, both tertians and quartans, likewiſe appeared, and ſome obſtinate rheumatiſms, but none of them attended with any unuſual ſymptoms, or requiring any method of cure different from what is commonly put in practice.

Though it is out of courſe, it may not, however, be altogether improper to obſerve in this place, that the winter in general has been re-

markably wet and cold; that diſeaſes of the breaſt have been more frequent than any others, and theſe chiefly ſuch as manifeſtly aroſe from a *ſeroſa colluvies*.

The ſmall-pox was uncommonly mild in general, few dying of it, in compariſon of what happens in moſt other years. Great numbers of children had the hooping-cough, both in London and ſeveral adjacent villages, in a violent degree. Strong, ſanguine, healthy children ſeemed to ſuffer moſt by it; and to ſome of theſe it proved fatal, where it was neglected, or improperly managed in the beginning.

For though nothing ſeemed to avail much in carrying off the diſeaſe, but change of air, with aſſes milk and proper diet; yet in conſtitutions like thoſe above deſcribed, if a vein was not opened, ſometimes oftener than once, with bliſters, manna, oxymel ſcilliticum in ſmall cinnamon-water, given frequently in ſmall doſes, the inceſſant cough brought on inflammations in the lungs, ſometimes of greater, ſometimes of leſs extent, in proportion to the fulneſs of the veſſels, and the diſpoſition to inflammatory diſorders.

A ſtrong healthy child, betwixt two and three years old, was ſeized with this diſorder in a violent degree: he was ſent into the country, the ſeaſon cold and wet, where his diſorder continued without abatement, having no medical aſſiſtance. In about a month the cough became leſs ſevere, but a continual feveriſh heat ſucceeded,

ceeded, with difficulty of breathing, a ſhort, troubleſome, but not convulſive cough, a quick, feeble pulſe, and looſe greeniſh ſtools, or elſe a tendency to coſtiveneſs. After three weeks illneſs, various methods were put in practice to aſſiſt him, but in vain; his fever increaſed, with ſome irregular remiſſions, and his breathing became more difficult till he expired, after about ſix or ſeven weeks indiſpoſition.

Upon opening the body, the lungs on both ſides were found full of matter, not collected in abſceſſes, but diſperſed and hardened throughout the whole ſubſtance of the lobes, in the lower edges of which it was ſo cloſely impacted, and in a manner indurated, as to reſiſt as much in cutting as the firmeſt glandular ſubſtance in the body.

On viewing the condition of the viſcera in the lower belly more attentively, ſome of the contents of the ſtomach were found floating in the left hypochondrium, being part of an oily draught unaltered: it was judged that ſome ſlight wound had been made in the ſtomach, though the knife was conducted with the utmoſt circumſpection; but the opening was ſoon diſcovered to have been made by another cauſe; that part of the bottom of the ſtomach which lies next the ſpleen, about the breadth of a crown-piece, was in ſo putrid a condition, as ſcarcely to bear the ſlighteſt touch, yet without having its colour much altered. The inteſtines were almoſt tranſparent and exanguious, and the colon larger

larger than the ſtomach; the gall-bladder full of a yellowiſh ſerum; the ſpleen ſmall and harder than common; every thing elſe was ſound. It muſt ſeem a little remarkable that the child had no vomitings, no *ſingultus*, or any ſymptom from whence it could be diſcovered that the ſtomach was particularly affected, unleſs we attribute to this cauſe a great unwillingneſs in the child to be moved, and at one period of the diſeaſe a total refuſal of liquids or other ſuſtenance; but this went off a few days before he died, during which time he took every thing with a kind of greedineſs. This caſe has been more prolixly related than perhaps is ſuitable; but 'tis done for the ſake of preciſion, which is always neceſſary in regard to facts with which it is of uſe to practitioners to be acquainted.

Obſervations on the Weather, &c. in June 1751.

The motions of the quickſilver in the barometer have, in this month, been confined within narrow limits: twice it ſubſided from 30. and 30.1; (the point where it was generally ſtationary during the laſt month) to 29.6, viz. on the 28th ult. and the 16th inſt. the wind being weſterly, with rain. It roſe about the 3d to 30.3, and continued there a day or two, the wind E. and N. E. which was its greateſt aſcent. The variations in the thermometer have been more conſiderable. The mercury ſtood at 53, the

26th

26th ult. its loweſt point, and where it had remained almoſt ſtationary during the preceding month; from whence it roſe by ſlow advances to 60, about the beginning of this preſent. And on the 5th, 6th, and 7th, the mercury ſtood at 68, at ſeven in the morning, the uſual hour of obſervation; though by noon it aroſe to 73. But as theſe notes are intended to point out the general temperature of the air, the effects of the mid-day ſun are not always mentioned. For though the ſudden changes of the air, without doubt, affect the animal œconomy, as certainly, and as dangerouſly, as the more equal procedure of a malignant ſeaſon, yet it is not every gleam of heat, or ſudden chill, that can produce ſuch effects.

An account of this kind would however be imperfect, were no notice taken of the ſudden alterations; and this, perhaps, may have induced ſome writers to give their journals entire to the public: but it ſeems quite ſufficient for every medical purpoſe, to mention only the greateſt variations that have happened in the ſpace of 24 hours, on either of the inſtruments above mentioned; which variations have in this month been very moderate, 4 degrees in the barometer, 5 in the thermometer, having been the greateſt in one natural day.

As the preceding months were cold and wet, this hath been, for the moſt part, warm and dry; there having been fewer rainy days in this month than fair ones in the former, though the wind,

wind, excepting about 10 days, was generally S. or N. W.

The diſeaſes that have chiefly appeared in this month, were the ſore-throat, which was, ſome years ago, epidemic; and a ſlow remittent fever, of which ſome caſes have occurred ſince the warm weather came in.

The former was treated in the method which was generally found beneficial when it raged before, and with ſucceſs; the latter, when neglected at the beginning, which, from the mildneſs of its ſymptoms, moſt frequently happens, too often proves fatal. The ſick find a wearineſs, head-ach, and ſtupor, with pains in the limbs, ſometimes in the ſide, but not acute: they have ſlight ſhiverings, ſucceeded by heats, but not often vehement: the complaints increaſe as night approaches, but are eaſier the next morning after a ſweat, which in ſome is profuſe: thus they continue ſeveral days, often without the leaſt apprehenſion, till on a ſudden thoſe about them are ſurprized with the appearance of imminent danger.

Moderate bleeding, gentle diaphoretics, and, in ſome caſes, ſmall doſes of the bark, would probably have prevented thoſe difficulties, from whence too often no art can extricate them afterwards.

It may not be improper to obſerve, that the town in general has been and continues very healthy, as appears both from the accounts of ſuch as cannot be unacquainted with this circumſtance,

cumſtance, as well as from the weekly bills, if their teſtimony may be in the leaſt relied upon. According to theſe the burials have been decreaſing ſeveral weeks, and by the laſt, amount to no more than 298, than which, it is apprehended, few can remember to have ſeen them lower at this time of the year. That theſe bills are not correct, is not entirely the fault of the company of pariſh-clerks, who, it ſeems, want power to compel thoſe who ought to be under their direction to do their duty. But whereever the omiſſion is, 'tis pity but it was rectified, ſince nothing would contribute ſo effectually to demonſtrate the influence of the ſeaſons on human bodies, as a juſt and regular account of thoſe particulars, which properly make a part of the bill of mortality.

Obſervations on the Weather, &c. in July 1751.

The weather in this month may be ſaid to have been warm and wet, it having rained more or leſs on 24 days out of 30; on ſome of them very heavily, and during a conſiderable part of 24 hours.

The wind was for the moſt part S. W. and the ſky frequently cloudy when it did not rain; the air temperate.

The mercury in the barometer ſometimes ſunk to 29.4. and one day roſe to 30.1. *viz.* on the 9th, the wind E. But it generally kept

kept between 29.7. and 9, not varying above ſix tenths of an inch in the whole month, nor ſhifting above two of theſe in one day.

In the thermometer the motions of the quick-ſilver were as limited as in the barometer. Twice it ſunk to 59, viz. on the 26th ult. and the 19th inſt. On the 10th, 11th, and 12th, it ſtood about 64 and 5, its higheſt aſcent, at the uſual hour of obſervation; for at noon it roſe to 72, on the 10th, the warmeſt day this month; wind E.

As the variations in reſpect to heat did not exceed 6 degrees in the whole month, ſo no two ſucceeding days differed from each other above 3 degrees, a greater equality than is common to be obſerved at this ſeaſon; to which cauſe, very probably, and to the moiſt temperature of the air, may be aſcribed the uncommon healthineſs of the town, and, as far as I can learn, of many parts of the country alſo.

Obſervations on the Weather, &c. in Auguſt 1751.

Barometer.

Higheſt 30 $\frac{3}{10}$, the 24th inſt. Wind N.E.
Loweſt 29 $\frac{4}{10}$ 27th ult. S.E.
Common ſtation about 29 $\frac{7}{10}$.
Greateſt variation in one day $\frac{3}{10}$.

Thermometer.

Thermometer.

Higheſt	64 degr.	5th inſt.	Wind S. S. W.
Loweſt	57	25th.	N. E.
Greateſt var. in one day	3	22d from 61 to 58	N. W.

Common ſtation 61 degrees.

It is ſcarcely poſſible to meet with a more equal temperature of the air in any climate, than has here been obſerved, during this laſt month; the wind has, for the moſt part, kept betwixt the South and Weſt points, till within theſe few days. The firſt and laſt weeks of this period were moderately warm, with ſeveral fair days. The middle part of the month was likewiſe moderately warm, but wet; and, excepting a very few days, the whole month rather cloudy and overcaſt.

As it ſeldom happens that there is any remarkable increaſe of mortality, without ſome very ſenſible change in the temperature of the air preceding it; and as the alteration in the weight of the atmoſphere did not exceed nine tenths, nor the heat of it vary above ſeven degrees, in the whole month; it is the more difficult to account for thoſe fluctuations in the weekly bills in this period; the numbers having fallen from 306 in one week, to 224 the next, and again roſe to 304, without any manifeſt reaſon. And though it would not be candid to attribute any part of this to want of care in the compilers of the bills, without good

evidence, yet one cannot but wiſh that all poſſible care might be taken to bring in their accounts as regularly as poſſible; otherwiſe the main end of an inſtitution, capable of being highly beneficial to ſociety, muſt not only be defeated, but miſtakes and prejudice be thereby occaſioned.

Obſervations on the Weather, &c. in September 1751.

Barometer.

Higheſt $30\frac{3}{10}$, 25th ult. Wind, N. E.
Loweſt $29\frac{3}{10}$, 19th, at night, with thunder, lightning, and heavy rain. S. E.
Greateſt variation in one day $\frac{6}{10}$, from $30\frac{2}{10}$ to $29\frac{6}{10}$, the 30th ult. N.W. to S. W.
Common ſtation about $29\frac{8}{10}$.

Thermometer.

Higheſt 62, with much rain, the 20th, Wind S. E.
Loweſt 50, fair and froſty, 9th, N. W.
Common ſtation about 57.
Greateſt variation in one day 6 deg. *viz.* 59 to 53 S. W. to N.W.

During the firſt part of this month, the weather was moderately warm, clear, and fair; from thence it changed to cool, windy, and wet; and continued ſo till towards the concluſion, when it became more temperate, and inclined to fair, though with ſome guſts of wind,

and heavy rain. This variable ſtate of the weather, however, ſeems to have had no remarkably injurious effects on the health of the people, the weekly bills continuing moderately low, and no epidemic diſorders appearing, ſo as to engage the attention of the public, or of the faculty. Some intermittents occurred about the beginning of the month, but theſe were neither ſo frequent, nor their ſymptoms ſo vehement, as often happens about this ſeaſon.

Obſervations on the Weather, &c. in October 1751.

Barometer.

Higheſt $30\frac{4}{10}$. Loweſt $29\frac{4}{10}$.

Greateſt variation in one day $\frac{3}{10}$ { 30th ult. from $29\frac{7}{10}$ to 30. S.W. to N.W.

Common ſtation about $30\frac{1}{10}$.

Thermometer.

Higheſt 56. Loweſt 46.

Greateſt variation in one day 5 deg. { 17th, 52 to 47. N.E. cloudy.

Common ſtation 52.

The weather in this month has been generally fair, clear, cool, and froſty, there having been more dry days in this month than in many of the preceding. There were ſome wet days about the beginning, and it now ſeems diſpoſed to rain, the wind having ſkipped from N.E.E. where it kept moſt part of two weeks, to S.E.

The variations in reſpect to heat and cold, as well as the weight of the atmoſphere, have been very inconſiderable; much leſs than in the preceding months: to this perhaps may be aſcribed the ſhare of health which the town enjoys; the weekly bills in the firſt week being 317, in the ſecond 373, the third 292, and the laſt 358.

A ſlow continual fever, beginning with acute pains in the forehead, extending to the eyes, with ſcarce any perceptible rigors preceding; a quick, ſoft pulſe, not much heat, a moiſt tongue, crude urine, moderate ſweats, but eaſily rendered profuſe, made its appearance about the beginning of the month, though many were not affected with it, and few mortally: bleeding eaſed, but did not remove the pains in the head; bliſters were of uſe; mild diaphoretics and cardiacs, in ſmall doſes, kept up the pulſe, and afforded great relief; large doſes, eſpecially of the volatile kind, occaſioned reſtleſsneſs, thirſt, a dry tongue, copious ſweats, and high-coloured water, however plentifully the ſick took diluters. Thoſe who recovered appeared to grow better about the 14th or 15th, the water depoſiting a copious ſediment of a yellowiſh colour.

The malignant ſore-throat affected ſeveral, both children and adults, ſome of whom had large hard tumours on each ſide of the neck externally; where theſe appeared early, and were very large, the ſick were in great danger, and if they recovered, the amendment was ſlow and tedious.

Obſervations

Obſervations on the Weather, &c. in November 1751.

The weather in this month has been unuſually tempeſtuous, and more variable than in the preceding. The laſt concluded wet and cold, the preſent began cold and froſty, and continued ſo till the 12th; the wind ſhifting then from N. E. to the Southward, brought rain and a warmer air; and from that time to near the concluſion of the month, we have had frequently very high winds, and heavy rains with ſome ſnow; with reſpect to cold, variable but not immoderate *.

Barometer.

Higheſt 30 $\frac{5}{10}$, 5th inſt. froſt. Wind N.
Loweſt 29. 0, 19th, heavy rain and ſnow.
Greateſt variation in one day $\frac{4}{10}$, 19th inſt.
Common ſtation about 29 $\frac{3}{10}$.

Thermometer.

Higheſt 54, 26th ult. Wind S.E.
Loweſt 42, 3d inſt. clear, very cold. N.W.
Greateſt variation in one day } 8 deg. { 28th, 54 to 46. N.W. high.
Common ſtation 47.

The concluſion of the laſt and the beginning of the preſent month were moderate, and the weekly bills very little affected. After the cold froſty weather ſet in, the burials increaſed from

* On the 21ſt was ſnow, hail, much lightning and thunder.

319 to 395, and kept up nearly to the ſame number the week following. A more temperate moiſt ſeaſon ſucceeding, reduced them to 338. It has been frequently obſerved, and as far as the bills may be depended on, is demonſtrable, that an exceſs of wet, with moderate warmth, is not ſo injurious to our conſtitutions, as a ſevere cold ſeaſon.

Obſervations on the Weather, &c. in December 1751.

The weather in this month was variable: the greateſt part of it was fair, froſty, dark, foggy, and cold; the wind northerly: the latter part of it was wet, and, with reſpect to cold, moderate; the wind generally W. or S.W. The weekly bills, which were very low in the laſt month, increaſed with the cold weather, and ſunk again as it became more temperate.

Barometer.

Higheſt 30. 4, 30th ult. Wind North.
Loweſt 29. 5, 20th inſt. Wind S.E.
Greateſt variation in one day $\frac{3}{10}$.
Common ſtation, 30.

Thermometer.

Higheſt 51, 21ſt inſt. Wind S.E.
Loweſt 37, 4th inſt. thick fog. N.
Greateſt variation in one day 6 deg.
Common ſtation 44.

In

In the preceding month the ſmall-pox began to make their appearance more frequently than they had done of late, and became epidemic in this. They were in general of a benign kind, tolerably diſtinct, though often very numerous. Many had them ſo favourably as to require very little medical aſſiſtance, and perhaps a greater number of people have got through them ſafely than has of late years been known; for the truth of which remark, the writer refers to the experience of practitioners. And as the ſmall-pox, of all the diſeaſes mentioned in the weekly bills, is, perhaps, the only one of which we have any tolerable exact account, it being a diſeaſe which the moſt ignorant cannot eaſily miſtake for another, it may not be improper here to ſubjoin the amount of the general bills, and the numbers of thoſe who died of the ſmall-pox during the four laſt years.

	Total Amount.	Small-pox.
In 1748,	23,869.	1789.
1749,	25,516.	2625.
1750,	23,727.	1229.
1751,	21,028.	998.

And here one cannot but regret the preſent defective method of compiling theſe bills; the liſt of diſeaſes is itſelf abſurd in ſeveral inſtances; and the perſons who are to aſſign a name to the diſeaſe of which any perſon died, are the leaſt qualified perhaps of all others to do it properly. It is needleſs in this place to point out to phy-

ſicians the benefits that would moſt probably accrue to the ſcience they are converſant in, from faithful hiſtories of the air, and the moſt obvious mutations in reſpect to its qualities, together with correct accounts of the ſeveral diſeaſes of which thoſe died whoſe deaths are regiſtered.

It would likewiſe take up too much room in this place to deſcribe the uncertainty to which thoſe are expoſed, who would form any uſeful or preciſe ideas from the preſent bills; it may not, however, be improper to wipe off one unjuſt aſperſion, which from theſe very bills is caſt upon our country by foreigners, at leaſt, ſo far as any thing of this kind can contribute to it.

The three moſt capital articles in our general bills, are Conſumptions, Convulſions, and Fevers; under which laſt article are commonly ranked, not only common inflammatory fevers, but every other ſpecies that is uſually enumerated; yet the number of thoſe who are ſaid to die of fevers ſeldom equals, very ſeldom exceeds the number of thoſe who are ſaid to die of Conſumptions; nay, it is much the moſt common for theſe to be as four to three of Fevers. Hence foreigners, who are ignorant in what manner our bills are compiled, give it out, that a Conſumption is the grand endemic of England; and conclude, unjuſtly, that, as ſcarce any diſeaſe is known to be more affected, either for the better or the worſe, by the air than this is, the air of England muſt moſt certainly have ſomething in

it

it extremely pernicious, as a diſeaſe, ſo much depending on the ſtate of the air, is ſo frequent among us: whereas, in fact, the truth of the caſe appears to be this: the ſearchers are commonly two as poor and ignorant perſons as the pariſh affords; theſe are to ſee all dead bodies, and to report to the company of pariſh-clerks of what diſeaſe they died: if the body is emaciated, which may happen even from an acute fever, 'tis enough for them to place it to the article of Conſumptions, though the death of the party was perhaps owing to a diſeaſe ſpecifically different; and thus a monſtrous account is framed by the ignorance of the ſearchers, to the diſgrace of our country, and even ſo far as to diſcourage ſome foreigners from coming among us.

It may be alſo obſerved, that from the ſame cauſe ſprings another abſurd effect, which is the article of Convulſions. 'Tis not uncommon for perſons who die of very different diſtempers, to have ſome convulſive motions before they depart; in fevers of various kinds, nothing is more common: yet if any thing of this nature is hinted at before the ſearchers, or they make any inquiry and find this to be the caſe, the dead are immediately added to the article of Convulſions. Of theſe facts the writer has known a multitude of inſtances; curioſity at firſt, ſeconded by an inclination to contribute all in his power to rectify ſo flagrant an abuſe of an inſtitution deſigned for, and ſtill capable of, very beneficial

purpoſes, having engaged him in ſome enquiries of this nature.

From comparing the accounts of the weather given in the preceding months, it will appear, that the ſeaſons, excepting a greater tendency to rain than has happened for ſeveral years paſt, have been uncommonly moderate; no extremes of heat or cold, nor any great or ſudden changes, in reſpect to either of theſe qualities. This may, perhaps, in a great meaſure have contributed much to the healthineſs of the year in this metropolis, it having been before obſerved, that no weather is in common ſo little productive of acute and fatal diſeaſes, as the warm and the moiſt, nor any ſo dangerous in theſe reſpects as the oppoſite; and may at the ſame time account for that remarkable addition to the article of coughs and hooping-coughs, which appears in the preſent year compared with the preceding; the account whereof is as follows:

Died of the cough and hooping-cough	In 1748,	150.
	1749,	82.
	1750,	55.
	1751,	275.

It may likewiſe be farther obſerved, that, according to the ſum of the laſt bill, the chronic diſeaſes are more numerous in proportion than the acute, theſe ſeeming to have diminiſhed in a ſomewhat greater ratio, and that probably for the reaſon before aſſigned; viz. that moiſt and moderately warm ſeaſons are the leaſt of all diſ-

poſed

poſed to produce acute diſeaſes. For as to the hooping-cough, it may rather be ranked among the chronics, it ſeldom proving fatal in a ſhort time, when ſo it terminates.

Obſervations on the Weather, &c. in January 1752.

Barometer.

Higheſt 30. 4.
Loweſt 29. 0, 14th. High wind, S. Rain.
Greateſt variation in one day $\frac{2}{10}$.
Common ſtation 29. 5.

Thermometer.

Higheſt 51 deg.
Loweſt 42 deg.
Greateſt variation in one day 4 deg.
Common ſtation 45.

The barometer in this month has afforded an unuſual phenomenon, which is worthy of notice, and eſpecially as the cauſe of it is ſince come to light. In the concluſion of the laſt and the fore part of this month, the quick-ſilver ſtood moſtly above 30 deg. with a northerly wind. It ſunk about the middle of the month very low, with the wind at S. E. and S. W. viz. to 29, and roſe but a degree or two during ten days, though the wind ſhifted to the north-eaſt, and kept northerly all the time, with dark, cold, moiſt weather, ſome rain, and now and then a ſlight appearance of ſnow.

What

What is moſt ſingular in this caſe is, that the quickſilver ſhould ſink ſo low, and continue there ſo ſteadily, with a wind that commonly raiſes it to 30 deg. at leaſt, that is, a full inch higher, unleſs great quantities of ſnow fall at the ſame time; but as very little of this appeared about London, the obſerver was at a loſs to account for it any other way than by ſuppoſing that in the north ſomething unuſual muſt have happened, of which, indeed, he was ſoon after informed *(a)*.

The variations, in reſpect to heat or cold, have been very inconſiderable; the mercury having traverſed only nine degrees during the whole month, and only four of theſe in any one day. But to the ſenſes the weather ſeemed much more variable, it having been in general a dark, moiſt, cold, and unpleaſant month.

A diſtinct benign kind of the ſmall-pox con-

(a) Extract of a letter from Richmond in Yorkſhire, dated the 21ſt inſtant.

——The ſnow began to fall the 15th, and, ſave a little intermiſſion the next morning, hath continued falling ever ſince; and though we have a ſtrong north-eaſt wind, which drives the ſnow into hollow, ſheltered places, yet in the middle of a plain field, into which I got with ſome difficulty this evening, to meaſure the depth of the ſnow, I found it to be 27 inches deep, very heavy, and cloſe. If it had fallen light, and with little wind, it muſt have lain above a yard deep upon the plain ground, which is more by above one half than moſt people here have ever ſeen, and it ſtill continues ſnowing.

tinued to be the epidemic of this month; a few confluent caſes occurred, but rarely, in compariſon of the numbers of thoſe who had them in a favourable way. Bleeding moderately, and an emetic, at the firſt attack, commonly rendered the diſeaſe extremely favourable, and, except a gentle anodyne to abate the ſenſe of ſoreneſs, or an emollient clyſter, was almoſt the only medical aſſiſtance required.

A few had the malignant angina, together with the ſmall-pox. Theſe required a warm antiſeptic regimen, and commonly did well. The intercurrent diſeaſes were the *peripneumonia notha*, and ſlow remittent fevers, often attended with *apthæ*, and running out to a great length, eſpecially if either copious evacuations on one hand, or a too warm regimen on the other, had diſordered the uſual procedures of nature.

Moderate evacuations, bliſters, gentle diaphoretics, keeping the body ſoluble at the ſame time, appear the moſt likely methods of removing the diſorders of the ſeaſon, being moſtly the produce of a *ſeroſa colluvies*.

Obſervations on the Weather, &c. in February 1752.

Barometer.

Higheſt 30. 2.
Loweſt 29. 4.
Greateſt variation in one day } 3. { the 9th, from 29. 8. to 29. 5.
Common ſtation 30. 0.

Thermometer.

Thermometer.

Higheſt 51, 24th inſt. Wind S. E.
Loweſt 38, 24th inſt. Snow, cold. N. W.
Greateſt variation in one day 5.
Common ſtation 45.

The wind during this month kept generally betwixt the S. E. and N. W. points, ſeldom continuing in any one, two days together. As in the preceding month the quickſilver ſunk unuſually with a northerly, ſo it has kept up with a ſoutherly wind in as remarkable a manner, though the cauſe has not hitherto appeared ſo evidently.

The weather has in general been inclined to fair, clear, and temperate, though interrupted with ſome ſmart froſts, heavy rains, ſnow, and hail; but theſe were of ſhort duration.

The ſmall-pox continued to be the principal epidemic of the ſeaſon, though in general of a benign kind. Children, and young perſons, unleſs the conſtitution is very unfavourable, get through it very well, and the height to which the weekly bills are ſwelled, ought to be conſidered in the preſent caſe as an argument of the frequency, not fatality of this diſtemper. For from what has occurred to the writer of theſe obſervations, as well as what he has been able to learn from ſome of the oldeſt practitioners, this diſeaſe has ſeldom, if ever, been known to be more general, or ſo mild and favourable as it is at preſent.

The

The practice of inoculation ſeems to gain ground conſiderably, and is generally performed in the manner deſcribed in vol. xxi. p. 123. Could thoſe who are employed in this affair be prevailed upon to communicate authentic accounts of their ſucceſs, they would do an eſſential ſervice to the public.

Obſervations on the Weather, &c. in March 1752.

Barometer.

Higheſt 30. 6½, the 27th and 28th ult. Wind N. W. clear and cold.

Loweſt 29. 3, the 15th, with ſtorms of wind S. W.

Greateſt variation in one day 4½.

Common ſtation about 30.

Thermometer.

Higheſt 55, 10th inſt. Wind S. E.

Loweſt 39, the 6th, froſt. Wind N. E.

Greateſt variation in one day 6, the 13th, from 50 to 44.

Common ſtation 47.

The weather in this period has been variable and inconſtant: the concluſion of the laſt month was fair, cold, and froſty; the fore part of this inclined to warm and fair; the middle wet and tempeſtuous; and the laſt inclined to cold, with ſtorms of wind, rain, and hail. The diſeaſes have been the ſmall-pox chiefly, rheumatiſm, and

and of late a few remittent fevers, affecting the head violently at the firſt attack, and very early occaſioning unfavourable appearances.

The ſmall-pox continue to be moſtly benign, often of the coherent kind, eſpecially in adults, and a few have the confluent. In theſe the ſpitting is commonly very copious, and ſo fatiguing as to prevent the patient from enjoying any reſt or quiet; occaſioning an early tendency to a delirium, and hindering the ſwelling of the face. Under theſe circumſtances, ſmall doſes of ſome warm anodyne, ſuch as *theriac. And. & conf. Damocrat.* from gr. 15 to ℈j or ℥ſs at a doſe, once in 6 hours, have afforded great relief, and rendered larger doſes of a paregoric at night leſs neceſſary for ſome days; the ſpitting becomes leſs troubleſome, the face ſwells, the pulſe grows full yet ſoft, and the oppreſſion, of which under this circumſtance they often complain, is relieved. In the preſent conſtitution at leaſt, it will perhaps be found true, from the moſt impartial and accurate obſervations, (and ſuch only ought to be admitted into medical records) that the danger will be in proportion to the ſpitting, and that it is expedient to reſtrain this diſcharge, and to divert the flow of it to the ſkin, by ſmall doſes of opiates. It ſhould be remembered, that this remark relates to the preſent conſtitution; and that it may not always hold good, that we ſhould endeavour by warm anodynes to ſuppreſs a diſcharge, which has heretofore been conſidered as a peculiar advantage.

tage. It ſhould only put us upon obſerving the *juvantia & lædentia*, with the utmoſt attention, and to act as reaſon and experience direct.

It ſeems likewiſe neceſſary to remark, that there is a poſſibility of occaſioning great detriment to the patient, by purging too early in this diſtemper. If the diſeaſe is benign, and the crop of puſtules not very large, no inconvenience ſeems likely to ariſe from waiting till they are in general dry, not only on the face and trunk, but even on the extremities. And it is not altogether improbable, but that ſome of thoſe diſorders proceed from this cauſe, which are intended to be ſhunned by early purging. 'Tis well known that the power of abſorption ſeems to be increaſed after purging. If this be the caſe, while the body is covered by a putrid cruſt, or by any quantity of putrid moiſture, a larger quantity muſt be received into the maſs of blood, muſt render it acrid, and occaſion hectic heats, or be depoſited in particular collections, and form abſceſſes, boils, and other inconveniencies or diſtempers. And, notwithſtanding the authority of ſome reſpectable names, it is not a matter out of doubt with ſome, how far purgatives may be beneficial in that ſtage of the diſtemper, wherein they have been ſo warmly recommended.

Obſervations on the Weather, &c. in April 1752.

Barometer.

Higheſt 30. 4. Loweſt 29. 2, the 25th inſt.
Wind S. W. with rain and hail.
Greateſt variation in one day 2.
Common ſtation 30.

Thermometer.

Higheſt 56. 56. Loweſt 42.
Greateſt variation in one day 5.
Common ſtation 51.

The weather at the end of the laſt month was froſty, clear, and cold; at the beginning of this, it became more moderate, grew cold and wet towards the middle, and again cleared up towards the concluſion, with ſome ſudden guſts of wind, and rain, and hail. But in general the weather, during this month, may be ſaid to have been remarkably even, and from its ſenſible qualities not likely to give birth to any particular diſtemper.

The ſmall-pox continued to be the principal epidemic during this period, as it had been in the preceding months; during which time it attacked moſt of thoſe who had not hitherto had the diſtemper, and is now ſpread into the ſuburbs, and the neighbouring villages, but ſtill in a favourable way in general. Some have the confluent, a few the bleeding kind; but theſe are not very common, conſidering the number

of

of thoſe who are ſeized with it. After bleeding where it was indicated, and cleanſing the ſtomach with an emetic at the firſt attack, mild cardiacs, with ſmall doſes of anodynes, ſucceeded much better than the cooling antiphlogiſtic regimen, which commonly occaſioned languors, increaſed a troubleſome, unavailing ptyaliſm, and retarded the eruption, and progreſs of maturation.

Several were ſeized with a remittent fever, accompanied with acute head-achs, reſtleſſneſs, and anxiety, a quick full pulſe, without much thirſt, which generally ſoon gave way to bleeding, emptying the firſt paſſages, and gentle diaphoretics.

THESE obſervations on the weather have now been carried on through all the ſeaſons, and the principal changes taken notice of. Though the advantages reſulting from them may yet be but ſmall, a longer ſeries may prove more fruitful. To the writer it appears, that not only a ſteady courſe of any kind of weather may produce particular diſeaſes, but likewiſe very quick tranſitions from one extreme to another may be equally injurious; with this view he has noted not only the greateſt aſcent and deſcent of the quickſilver in his inſtruments, but likewiſe the greateſt variations that have happened in the ſpace of 24 hours, in any part of the month; and theſe circumſtances he has placed as follows:

VIEW *of the* General State *of the* AIR *for* 1751.

	Barom.			Thermom.		
	Higheſt.	*Low.*	*Var.*	*H.*	*L.*	*Var.*
April	30.	29.1	3	57	43	4
May	30.4	29.2	3	58	47	5
June	30.3	29.6	5	68	53	5
July	30.1	29.4	6	65	59	3
Auguſt	30.3	29.4	3	64	57	3
September	30.3	29.3	6	62	50	6
October	30.4	29.4	3	56	46	5
November	30.5	29.0	4	54	42	8
December	30.4	29.5	3	51	37	6
January	30.4	29.0	2	51	42	4
February	30.2	29.4	3	51	38	5
March	30.6½	29.3	4½	55	39	6

And it may afford ſome ſatisfaction to the reader to obſerve, that, notwithſtanding the daily complaints we hear from thoſe about us, and the repetition of the ſame complaints that occur in the writings of ſome foreigners, our climate is more temperate, the extremes of heat and cold more confined, the tranſitions from one extremity to another more gradual, than could eaſily have been imagined; and more ſo, perhaps, than can be equalled in every reſpect by any country in Europe, of which we have any authentic memorials, as may perhaps on ſome future occaſion be demonſtrated.

From the preceding table it will appear, that during the laſt 12 months the mercury in the barometer never roſe higher than 30 inches, 6½

tenths; never ſubſided lower than 29°; conſequently, that its motion did not much exced 1 $\frac{1}{2}$ inch in that time, nor more than 6 tenths of an inch in 24 hours.

The thermometer likewiſe diſcovers a more equal temperature, with reſpect to heat and cold, than might have been expected in a country where ſo many exclamations are daily vented againſt the inconſtancy of the weather, and the irregularity of the ſeaſons: the utmoſt aſcent of the quickſilver was 68 degrees, the loweſt deſcent 37 degrees; ſo that it only traverſed in the ſeveral changes from ſpring to ſummer, from both to autumn and winter, about 32 degrees, and not more than 8 of theſe in 24 hours at any one time.

If we, therefore, compare this account with the moſt accurate we have of the weather in any other country, we ſhall perhaps find abundant cauſe to be ſatisfied with our own, in this, as well as in moſt other reſpects.

Obſervations on the Weather, &c. in May 1752.

Barometer.

Higheſt 30 $\frac{3}{10}$, the 11th. Wind E.
Loweſt 29 $\frac{4}{10}$.
Greateſt variation in one day $\frac{3}{10}$.
Common ſtation 29. 9.

Thermometer.

Higheſt 63.

Loweſt 49, 30th ult. Wind N.

Greateſt variation in one day, from 55 to 61, the 13th. Wind N.E.

Common ſtation 55.

The concluſion of the laſt month was wet, cloudy, cold, with high winds; the beginning of this was more temperate, the weather moſtly fair and clear, with ſhowers ſometimes intervening, and continued ſo till towards the end of this month.

The mercury in both inſtruments has been remarkably ſteady, the ſeaſon of the year conſidered; the ſenſible changes more moderate than uſual; and if the article of ſmall-pox had not ſwelled the weekly accounts conſiderably, it would have appeared to have been, as in reality it was, a healthy time, ſcarce any thing like an epidemical diſeaſe occurring in this period.

Obſervations on the Weather, &c. in June 1752.

Barometer.

Higheſt 30 $\frac{3}{10}$. Loweſt 29 $\frac{6}{10}$.

Greateſt variation in one day $\frac{4}{10}$, *viz.* the 4th. Wind high, S.W. yet it roſe from 29.8 to 30.2.

Common ſtation 29 $\frac{9}{10}$.

Thermometer.

Thermometer.

Higheſt 66 deg. Loweſt 59.

Greateſt variation in one day 5, the 11th, from 60 to 65. Wind W. clear and calm.

Common ſtation 61.

The concluſion of the laſt month was cloſe, ſultry, and wet; the fore-part of this was fair, ſerene, and warm. About the middle, the weather became more variable, and at length ſet in cloudy, wet, and ſomewhat cool, and ſo continues. The wind for the moſt part was ſoutherly, and ſometimes very high, which, together with the moiſture of the air, made it cold to the ſenſe, though, by experiment, the heat was equal and moderate.

The ſmall-pox ſtill continues in the neighbourhood of this city, not many eſcaping who have not had it before. This article, in the weekly bills, hath been very high, but ſeems now to be upon the decline: the mortality, however, ought not to be eſtimated by this ſcale, without taking into conſideration the numbers who have it, and eſcape not only with life, but even favourably; witneſs the crouds of ſuch whom we daily ſee in the ſtreets, without any other veſtige than the remaining redneſs of a diſtinct pock.

There is a circumſtance of this diſeaſe which I have once ſeen, and which has fallen under the obſervation of ſeveral gentlemen, eminent in the profeſſion, who related it to me, though I

do not remember to have found it in any writer on the ſubject. Several children, who had the diſtemper in a very favourable manner, loſt their ſpeech, and became unable to ſtir or help themſelves; and this without being reduced in fleſh, or labouring under any diſcharges that might be ſuppoſed to weaken them in any ſuch degree, ſo that it has much more the appearance of a palſy, than mere imbecillity, and affects the organs of ſpeech as well as other inſtruments of motion. This diſorder has likewiſe been obſerved to occur in ſuch caſes, chiefly, where the eruption has been attended with convulſions; and I do not remember to have heard of one inſtance in which this had not been the caſe.----This affection ſeems to be more troubleſome and alarming to thoſe about the ſick, than dangerous; for though it goes off ſlowly, yet all I have heard of at length have recovered perfectly. A perpetual bliſter betwixt the ſhoulders, gentle rhubarb purges, a proper diet, and the air, ſeemed the moſt ſerviceable remedies.

Obſervations on the Weather, &c. in July 1752.

Barometer.

Higheſt 30. 2, the 18th. Wind S. W. and much rain.

Loweſt 29. 5, the 25th. Wind S. fair and clear.

Greateſt variation in one day 2.

Common ſtation 29. 7.

Thermometer.

Thermometer.

Higheſt 70 deg. the 13th. Fair, clear.
Loweſt 60, very warm. Wind S.E.
Greateſt variation in one day 7 deg. *viz.* from 63 to 70, the 13th.

Common ſtation 63.

The whole of the preceding month may be ſaid to have been wet, cloudy, and yet inclined to warm. The barometer ſtood moſt common-at 29.7, or 8, which is what is meant by its common ſtation; it never ſunk or roſe above two degrees in one day, which ſhews an equality, hardly to be expected while the wind ſhifts to every part of the compaſs, with ſudden ſtorms of heavy rain. One phænomenon was remarkable: It rained hard while the quickſilver ſtood very high; it was fair when at the loweſt. This, however, proves no more, than that we are not yet acquainted with all the cauſes that affect this inſtrument. The thermometer, except on one particular day, was alike ſteady; it ſeldom varied above three degrees in 24 hours, and the quickſilver ſtood oftener at 62 or 3, than at any other point. The winds blew moſtly from the ſouthern or weſtern points, and ſeldom very freſh.

Few acute diſeaſes, except the ſmall-pox, appeared this month. The article of fevers in the weekly bills was perhaps ſeldom ever lower. The number of thoſe who died of the firſt-mentioned diſeaſe ſeems to be leſſening; but the ma-

lignity rather ſeems to increaſe with the warmth of the weather, ſome inſtances having lately occurred of a very malignant confluent ſort; conſiderable numbers however eſcape: and this year may be marked, in the annals of medicine, as one of the moſt remarkable conſtitutions that has happened in our memory, both for the frequency of this diſtemper, and its mildneſs; and it may alſo be taken notice of, that the weather has been at the ſame time unuſually temperate with regard to heat, though in general wet and cloudy.

Children from one to three years old have, I believe, ſuffered more from this diſtemper, during this conſtitution, than thoſe of any other age, at leaſt it has ſo fallen out under the writer's obſervation. Several inſtances he has known, of this age, when the load was not very large, the eruption kindly, the maturation at firſt very promiſing; but inſtead of ripening on the extremities, about the 10th or 11th, they continued crude and watery; the pulſe quick, with great heat, delirium, reſtleſsneſs, and difficulty of breathing; the tongue dry; the belly ſometimes looſe, with dark fœtid ſtools, at other times diſpoſed to coſtiveneſs. In this manner ſome have continued 17 or 18 days, inſenſibly waſting both in fleſh and ſtrength, in ſpite of every effort to aſſiſt them, and have then expired.

Obſervations

Obſervations on the Weather, &c. in Auguſt 1752.

Barometer.

Higheſt 30 $\frac{2}{10}$. Loweſt 29 $\frac{5}{10}$.
Greateſt variation in one day $\frac{2}{10}$.
Common ſtation about 30.

Thermometer.

Higheſt 68 deg. 10th at night. Wind N.
Loweſt 60, 16th. High wind at W.
Greateſt variation in one day 4 degrees.
Common ſtation 63.

The end of the laſt month was inclined to be wet, windy, and dark. This began fair, cloudy, and warm: about the middle it became fair, and clear, with ſome intervening ſhowers, and ſo continued to the 25th. The wind was variable, ſeldom continuing more than two days in the ſame quarter, but kept generally S.W. The quickſilver in the barometer was unuſually ſteady, and often kept high, with the wind at S.E. In the thermometer, except on one or two days, its motion was confined, the ſeaſon of the year conſidered, within very narrow limits; the air having ſeldom been hot, or otherwiſe than warm, and often moiſt.

The ſmall-pox, which was ſlowly decreaſing laſt month, has continued, through the courſe of this, to grow leſs frequent, and the bills were leſs by 40 laſt week, than at the concluſion of the laſt month.

Fewer

Fewer fevers have ſeldom been known at this ſeaſon; which may be ſaid in general to be very healthy.---Hypochondriac complaints are frequent; hæmorrhages from various parts, the hemoptoe eſpecially are not uncommon; and ſuch other complaints as ariſe from great laxity of the ſolids, and conſequent increaſe of viſcidity in the fluids.

Obſervations on the Weather, &c. in September 1752.

Barometer.

Higheſt 30 $\frac{3}{10}$. Loweſt 29 $\frac{2}{10}$.

Greateſt variation in one day $\frac{6}{10}$, *viz.* the 26th ult. when it roſe from 29 $\frac{2}{10}$ to 29 $\frac{8}{10}$. High wind at N. W.

Common ſtation about 29 $\frac{9}{10}$.

Thermometer.

Higheſt 64 deg. the 19th. Wind South.

Loweſt 54, the 27th ult. W. N. W.

Greateſt variation in one day 6 deg. the ſame day,

Common ſtation 60 degrees.

The laſt month concluded ſtormy, wet, and cold; this began more moderately, though ſomewhat windy, dark, and cold: towards the middle the weather became fair, clear, and warm; and, except a few windy days about the 22d, has been moderate, and inclined to fair.

The ſmall-pox has almoſt totally diſappeared in

in the city; in the ſuburbs, and extreme parts of the town, it is much leſs frequent than it has been; in ſome of the neighbouring villages it yet ſubſiſts, though in none of them, as far as I can learn, with any remarkable frequency.

Many have been ſeized with pains about the region of the ſtomach, attended with ſickneſs, vomiting of green porraceous bile, and coſtiveneſs. Shiverings, laſſitude, and pains in the limbs, often accompanied the firſt attack; in ſome, the leaſt attempt to raiſe the head from the pillow, produced a tendency to vomiting. The heat in moſt was moderate; the pulſe ſmall, and ſeldom quick. Small doſes of the ſaline mixture, made quite neutral with abſorbents, and a few drops of *Tinct. Thebaic.* commonly took off the diſpoſition to vomiting in a ſhort time, and a doſe of rhubarb, or hiera picra, then was retained, and gave effectual relief.

Emetics, though of the mildeſt kind, ſeemed not to be of the uſe one might have expected. The pain often ſeemed to be increaſed afterwards; the tendency to vomiting became more continual; the laſſitude, reſtleſsneſs, and proneneſs to vomit, upon motion, more troubleſome; and the difficulty of procuring the neceſſary diſcharges downwards, increaſed.

Obſervations

Obſervations on the Weather, &c. in October 1752.

Barometer.

Higheſt $30\frac{4}{10}\frac{1}{2}$. Loweſt $29\frac{6}{10}$.
Greateſt variation in one day $\frac{2}{10}$. *viz.*
Common ſtation about $29\frac{2}{10}$.

Thermometer.

Higheſt 62 deg. Loweſt 50 degrees.
Greateſt variation in one day 6 degrees.
Common ſtation 56 degrees.

During this month, the weather has been leſs variable, than for the ſame length of time it has been ſince the year commenced. Excepting two or three ſhowers, it has been altogether fair, moſtly ſunſhine, and little wind; and though in and about the city there have been very thick fogs, morning and evening, during the two laſt weeks, now and then continuing all day, yet moſt commonly they broke away before noon, and left us the cleareſt ſky, for the greateſt length of time together, we have had this ſummer.---The warmth and equal temperature of the air, have been not leſs remarkable than the dryneſs; and though the wind has been chiefly N. E. yet the air was neither ſo cold or piercing, as is commonly felt when it blows from this quarter. Should theſe remarks afford no other advantage, yet to have it in our power

to

to compare, and with ſome degree of exactneſs, the paſt ſeaſons with the preſent, will afford ſatisfaction; and if the reader looks back to the yearly table (See April 1752, p. 178) he may there at one view ſee how much the laſt differed from the preſent, both in reſpect to coldneſs and wet. It may alſo be proper again to explain what is meant by the words *common ſtation*; which are not intended to ſignify the mean height betwixt the higheſt aſcent, or loweſt deſcent of the quick-ſilver, in either inſtrument, but to denote that it oftener ſtood about this point, than at any other.

The town in general has been healthy, as from ſo equal a ſeaſon might be expected; ſome inflammatory diſorders of the bowels have occurred, but oftener occaſioned by errors in diet (eſpecially the eating of vaſt quantities of walnuts, which are uncommonly plentiful) than by any other cauſe.

And here it may not be improper to obſerve, that this nut ſeems entirely indigeſtible in the ſtomach, unleſs it be firſt well chewed, and by the teeth ground down as fine as it ought to be to become nutritious. Without this care, it breaks under the teeth into ſmall angular bits, often with ſharp edges, capable of hurting very tender bowels; and by this means, and not by any acrid irritating quality they are naturally poſſeſſed of, while recent, occaſioning pains, ſometimes fluxes, or ſpaſmodic conſtrictions of the guts, and obſtinate coſtiveneſs.

And it has happened in many ſuch inſtances, that after the walnuts thus haſtily devoured, have laid in the body many days, they have been voided undigeſted and unaltered, to appearance at leaſt: ſo that there is great reaſon to ſuſpect, that as the nuts are ſwallowed, ſo they paſs the ſtomach and inteſtines, no power being therein lodged, capable of reducing them into the form of chyle. It may however ſo happen that they may become highly injurious, if long retained in the body, not only from their form, as hath been mentioned above, but likewiſe from a rancid, cauſtic acrimony, which the oil of this nut ſeems capable of acquiring, by digeſtion, as well as moſt other oils of the like nature and extraction; which from the mildeſt and leaſt irritating ſubſtances become, merely by being expoſed to proper degrees of heat, as acrid and as ſtimulant as moſt in nature; ſo that if a ſpaſm is once occaſioned in the guts by their figure, and coſtiveneſs enſues, they every moment acquire new properties, which render them capable of producing very miſchievous conſequences. To prevent theſe, it is therefore beſt to eat but few at a time, to grind them very well, and then they may be uſed with as much ſafety, by moſt people, as any other kind of fruit.

Obſervations on the Weather, &c. in November 1752.

Barometer.

Higheſt 30 $\frac{5}{10}$ $\frac{1}{2}$.
Loweſt 29 $\frac{2}{10}$. *viz.* 9th ult. High wind S. S. W.
Greateſt variation in one day $\frac{6}{10}$, *viz.* 22d, from 30.2 to 29.6; thick fog, and wind from N. W. to S. S. W.
Common ſtation about 30 $\frac{2}{10}$ $\frac{1}{2}$.

Thermometer.

Higheſt 57 deg. Loweſt 46 degrees.
Greateſt variation in one day 6 degrees.
Common ſtation 52 degrees.

In this month the weather has been more variable than in ſome of the preceding; in the firſt part, the air was moſtly fair, clear, and froſty; with thick fogs morning and nights in the city. Towards the middle of the month, it became more dark and cloudy, with high winds at S. S. W. and a few ſhowers; concluding moiſt and foggy.

The mercury in the barometer often ſtood at an uncommon height, even with the winds at S. S. W. when it generally ſubſides very low. In the thermometer it was more variable, though not more ſo than is uſual at this ſeaſon.

So that upon the whole the weather may be ſaid to have been as temperate in this, the time of

of the year conſidered, as many of the preceding months.

The meaſles have made their appearance in ſome parts of the town, but are not hitherto accompanied with any uncommon or very dangerous ſymptom. The ſmall-pox have not ceaſed, nor the hooping-cough altogether, yet theſe are leſs frequent than they have been.

Rheumatiſms, and an inſidious kind of rheumatic fever, have appeared this month more frequently than in the preceding. This fever is at firſt perceived by ſlight ſhiverings, acute pains in the limbs, ſhifting with great quickneſs from part to part: the heat not immoderate; the pulſe, for many days, not much quicker than in time of health; the belly rather coſtive; and the urine uncommonly thick and clay-coloured. After ſeveral treacherous remiſſions, the head is at length attacked, a delirium, watchfulneſs, or *coma vigil*, and ſpaſms of every part ſucceed, which end unhappily.---Whatever evacuations ſeem neceſſary, muſt be directed early; whatever weakens, muſt in the progreſs of the diſeaſe be avoided; and ſtimulants applied with moderation. Sometimes *apthæ*, of a benign aſpect, happily terminate the diſeaſe. If a dark-coloured *ichor* diſcolours the lips or tongue, the event is too often fatal.

Obſervations

Obſervations on the Weather, &c. in January 1753.

Barometer.

Higheſt 30 $\frac{4}{10}$.

Loweſt 29, the 10th inſt. with rainy tempeſtous weather, wind W. S. W.

Greateſt variation in one day $\frac{6}{10}$.

Common ſtation 30 $\frac{1}{10}$.

Thermometer.

Higheſt 49 degrees.

Loweſt 38 deg. 24th, hard froſt. Wind N.

Common ſtation 43 degrees.

Greateſt variation in one day 5 degrees.

Thermometer in the open air, in London.

Higheſt 43. Loweſt 32.

Greateſt variation between any two mornings, 7 degrees.

The weather in this month, though ſometimes variable, has been moſtly inclined to cold, fair, and froſty, and in the city, a few days excepted, very dark. The wind was often northerly, and when from the S. and S. W. points, generally bluſtering, with cold rain or ſleet.

The variations were not however ſo ſudden, or ſenſible, as to affect the general health in a very eminent degree; except in chronic diſorders of the breaſt, as aſthmas, peripneumonies, and *defluxions*, which were very frequent about

the beginning of the month, and were fatal to many.

Some ſlow continual fevers have likewiſe appeared, and terminated variouſly, ſome with benign *apthæ*, which appeared critical, or elſe with miliary eruptions, not in the neck and breaſt only, but over the whole body.

This kind of fever ſeldom admits of any evacuation, after the diſeaſe is once confirmed, except by bliſters, and moderate ſweats: and theſe, if profuſe, are moſtly prejudicial, and the former almoſt always ſo, when applied very early, as is too much the general practice of thoſe, who, by a pernicious cuſtom, are commonly the firſt conſulted; and who ſeldom fail to adviſe bleeding and bliſtering almoſt in the ſame breath, and ſuch medicines, as they ſuppoſe will promote the moſt plentiful ſweats: ſo that in two or three days, it often happens that the ſick have undergone every ſpecies of pharmaceutical direction, and are then ſurrendered, unneceſſarily enfeebled, into the hands of the phyſician; who can only lament the loſs of thoſe forces, which he ſees himſelf deprived of, to combat the diſeaſe; and ſubmit to a tedious attendance, and a doubtful prognoſtic, than which ſcarce any thing is ſo diſagreeable to the rational and humane practitioner.

Obſervations on the Weather, &c. in February 1753.

Barometer.

Higheſt 30 $\frac{4}{100}$. Loweſt 29 $\frac{1}{100}$.
Greateſt variation in one day $\frac{4}{100}$.
Common ſtation 29 $\frac{8}{100}$.

Thermometer within doors.

Higheſt 52 degrees.
Loweſt 38 deg. 11th, hard froſt. Wind N. E. Thick fog.
Common ſtation 45 degrees.
Greateſt variation in one day 5 degrees.

Thermometer without doors, at 8 in the morning.

Higheſt 51. Loweſt 29, the 11th ult.
Greateſt variation in one day 10 deg. viz. the 13th, from 35 to 45.
Common ſtation 43.

The laſt month concluded froſty, dark, and very cold; this began with froſt, ſleet, or ſnow: towards the middle, the weather became wet and more temperate, and ſo continued, with ſome ſhort intervals of fair and clear weather, to the end of this account. The winds were variable, and ſometimes bluſtering, from the S. S. W.; as they were cold, with dark fogs, from the N. and N. E.

The fevers mentioned in the laſt month occurred often in this, and proved fatal to ſeveral.

Rheumatiſms were alſo common, and eſpecially among children from 4 to 8 or 10 years old: theſe young ſubjects generally were ſeized with a pain about the neck, back of the head, or the ſhoulders; from hence it often ſhifted to the hands and feet, and knees, and plainly diſcovered its nature by the ſwellings it produced: the fever attending it had regular exacerbations in the evening, followed by moderate ſweats and freedom from pain in the morning; which interval continued with a calm quiet pulſe till 4 or 5 in the afternoon, when the ſymptoms again appeared. In ſome young ſubjects, where evacuations were uſed too freely, either by bleeding or purging, the diſorder proved ſuddenly and unexpectedly fatal; the pains of the head became violent, either a convulſion, or hemiplegia, or both, ſucceeded, and death ſoon followed. A decoction of the bark, with rhubarb ſufficient to keep the belly open, given in ſmall doſes, and often, eſpecially in the intervals, commonly removed the diſorder in a few days with great certainty; whilſt bleeding, purging, and diaphoretics, often rendered the diſtemper tedious, and ſometimes, as is obſerved above, fatal.---Some ancient people died ſuddenly, ſoon after the weather, from very cold and dry, became wet and temperate; and ſome inſtances occurred at this time, as they have done heretofore in the like caſes, that have repeatedly induced me to reflect on the promiſcuous uſe of bleeding in theſe ſudden emergencies, with ſome anxiety. For

it

it ſeems very probable, that the caſes of perſons in years, who are ſeized with apoplexies, ſudden faintings, or other ſymptoms of ſpeedy diſſolution, in which bleeding can be of any uſe, are very few. And

That caſes of this nature, in which bleeding is certainly pernicious, and deprives the unhappy perſon of any chance for a recovery, are very numerous.

It would carry me beyond the limits I have any right to aſk for, and into a ſeries of reflections not ſuited to every reader's taſte, to endeavour to fix the proper indications for bleeding: but what is above ſuggeſted will, I hope, induce every practitioner to think twice, before he orders this operation to be performed; becauſe in many caſes, if the patient ſhould ſurvive it, either a univerſal palſy ſucceeds, and the patient dies in a ſhort time; or he is ſeized with a partial one, which perhaps attends him to his grave. Common uſage precipitates too many into this practice; and of the few who think at all, it is not every one who has reſolution enough not to be influenced by ſo current an opinion.

Obſervations on the Weather, &c. in March 1753.

Barometer.

Higheſt 30 $\frac{5}{10}$. Loweſt 29 $\frac{6}{10}$.

Greateſt variation in one day $\frac{4}{10}$.

Common ſtation 30.

Thermometer within doors.
Higheſt 54 deg. Loweſt 43 deg.
Common ſtation 48 degrees.
Greateſt variation in one day 6 degrees.

Thermometer without doors.
Higheſt 55 deg. Loweſt 32 deg.
Greateſt variation in one day 8 degrees, *viz.* the 14th, from 42 to 50. Wind S.W.
Common ſtation 40.

The mercury in the barometer, during this inconſtant month, has ranged within narrower bounds than uſual, and its tranſitions have been more confined. In the thermometer, the variations have not been very remarkable. The former part of this month, as well as the concluſion of the laſt, the weather was moſtly fair, clear, and cold, the wind generally at E. or N.E.; towards the middle it ſhifted to the S.W. blowing freſh with gentle ſhowers and temperate warmth, and ſo continued to the end of the month.

Diſorders of the breaſt were frequent; ſeveral young ſanguine perſons, eſpecially, had ſpittings of blood, without much pain in the breaſt, or difficulty of breathing: moderate evacuations, by bleeding and purging, with ſmall doſes of nitre and the mildeſt balſamics, ſoon relieved them. About the middle of the month divers complained of unuſual head-achs, attended with feveriſh ſymptoms, which were often very alarming at the firſt attack, but ſoon ſubſided. They complained firſt of pain or ſtiffneſs in the neck, with

with darting pains about the temples, and ſo acute as oftentimes to raiſe the pulſe and heat conſiderably. The external parts of the head grew ſore; and to ſuch a degree as it was painful to reſt it on the pillow. Now and then the pains remitted an hour or two, and again returned with their former violence; but the whole abated in three or four days, and gradually wore off, leaving, however, a ſort of uneaſineſs about the head, which the patients commonly compared to a cap of lead, or ſome heavy ſubſtance incloſing it. Moderate bleeding or cupping, bliſters, nitre joined with volatiles in ſmall doſes, and given often, were ordered to ſeveral under theſe complaints, with advantage.

Palſies alſo were not uncommon, and afforded ſome freſh inſtances of the diſadvantages of indiſcriminate bleeding. The writer of theſe remarks is no enemy to this operation in general; but in diſeaſes, where every means that the phyſician employs are ſuch as invigorate, to begin the cure by deducting from that force which we want to increaſe, certainly requires ſome conſideration.---There may be caſes, it is allowed, where bleeding in palſies may be of uſe; but that it is generally ſo, is denied; and cool, unprejudiced obſervation will, I doubt not, lead to the ſame opinion. And it is of the more conſequence to deliberate maturely on this operation in the caſe before us, in as much as the remedy in queſtion is not of the unimportant kind: if it is not proper, it is very improper, and coſts the

patient much time to recover it, and the phyſician not a little uneaſineſs, to ſee his utmoſt efforts avail much leſs, than where bleeding has been omitted.

Obſervations on the Weather, &c. in April 1753.

Barometer.

Higheſt $30\frac{2}{10}$. Loweſt $29\frac{2}{10}$.
Greateſt variation in one day $\frac{4}{10}$.
Common ſtation $29\frac{7}{10}$.

Thermometer within doors.

Higheſt 59 deg. Loweſt 41 deg.
Common ſtation 52 degrees.
Greateſt variation in one day 6 degrees.

Thermometer without doors.

Higheſt 60 deg. Loweſt 39 deg.
Common ſtation 45.
Greateſt variation in one day 10 degrees.

The weather, at the end of the laſt month, and the beginning of this, was generally fair, clear, and temperate, though with intervening ſhowers ſometimes accompanied with hail. Towards the middle it became more diſpoſed to be wet, dark, and cold, but grew uncommonly warm, ſerene, and pleaſant, for a few days, about the 20th; after which it again became cool, with ſhowers almoſt daily. The wind has generally been S.S.W. or weſt; a few days it ſtood N.E. and ſometimes N.W. Upon the whole, the weather

weather has been ſeaſonable; the advances to warmth very ſlow and uniform: and, in this place, few remember to have obſerved a ſpring, wherein the progreſs from cold to warm, or rather temperate, which it has never yet exceeded long together, hath been more natural.

As the weather has been thus uncommonly ſeaſonable, the diſeaſes have been few, and the acute ones leſs violent.---Coughs with a remarkable hoarſeneſs, ſome ſtraitneſs of the breath, and, in ſome, attended with a copious expectoration, have been frequent during this month; likewiſe the ſore-throat, attended with ulcers, but generally mild, unleſs where copious bleeding, purgatives, and nitre, had made it otherwiſe. Fewer ſpring-fevers have occurred than I have ever known; and theſe, commonly, by moderate evacuations, ſoon became regular intermittents, and early gave way to the bark.

Obſervations on the Weather, &c. in May 1753.

Barometer.

Higheſt $30\frac{5}{10}$. Loweſt $29\frac{4}{10}$.
Greateſt variation in one day $\frac{2}{10}$.
Common ſtation $30\frac{1}{10}$.

Thermometer within doors.

Higheſt 61 deg. Loweſt 50 deg.
Greateſt variation in one day 3 degrees.
Common ſtation 44 degrees.

The

The weather in this month has been leſs variable than is uſual at this ſeaſon: the mercury in the barometer kept very high for the moſt part, even with the wind at S.W. In the thermometer, its motions have been confined to narrow limits, the time of year conſidered. During the whole ſpring, the progreſs from cold to temperate and warm, hath been the moſt gradual and regular that moſt people remember; and the tranſitions from one extreme to the other very inconſiderable. For which reaſons the year has been thus far healthy, the produce of the earth abundant, and the proſpect of ſtill greater abundance very promiſing.

Nothing like an epidemic has appeared; and conſumptions, the common ſpring diſeaſe, have not been ſo numerous as in ſome preceding years. Palſies and apoplexies were frequent about the beginning and middle of the month, and ſome hæmorrhages towards the concluſion.

A root, of which the Chineſe have long been extravagantly fond, has of late, I find, been recommended in this place; and merits the greater conſideration, as it is one of the products of our own colonies in North America. The name of this drug is *Ginſeng*; the manner of its diſcovery, and other circumſtances of its natural hiſtory, would take up too much room: but give me leave to ſay, that ſome conſiderable parcels of the root have been ſent to China, and diſpoſed of to great advantage; that this advantage would ſtill have been greater, had thoſe who gather the

root, collected it at a proper ſeaſon, and cured it in the Chineſe manner; and that it has been tried in many caſes here, yet not ſo fully as to eſtabliſh its character in any particular diſeaſe. In tedious chronic coughs incident to people in years, a decoction of it has been of ſervice; and in ſuch diſorders as attend advancing years, where the ſolids are too inactive, the fluids viſcid and acrimonious, it ſeems to promiſe conſiderable benefit, if uſed in moderate doſes, and long continued. Time will, perhaps, diſcover its proper effects; and, as it conſiſts of a mild, lubricating mucilage, joined with ſome degree of aromatic warmth, it may be tried in ſuch diſorders with great ſafety. One drachm and a half, boiled in four ounces of water, in a cloſe veſſel, and ſlow heat, about half an hour, will be a proper mean doſe; or it may be given in powder to half a drachm or two ſcruples. Upon the whole, though it does not ſeem entitled to even a moderate ſhare of thoſe virtues that are romanticly aſcribed to it by the Chineſe *(a)*, yet is it very well worthy the attention of the faculty, and promiſes fair to be a more uſeful and efficacious medicine, than many now kept in the ſhops, as the Sarſa China, and ſome others; and a medicine too, of which we may always depend on a conſtant ſupply from our own plantations.

(a) Du Halde's hiſt. fol. vol. i. 322. ii. 217.

Obſervations

Obſervations on the Weather, &c. in June 1753.

Barometer.

Higheſt $30\frac{3}{10}$. Loweſt $29\frac{7}{10}$.
Greateſt variation in one day $\frac{2}{10}$.
Common ſtation $30\frac{1}{10}$.

Thermometer.

Higheſt 71 deg. Loweſt 56 deg.
Greateſt variation in one day 11 degrees, the 9th ult. from 59 to 70.
Common ſtation 66 degrees.

The laſt month concluded dry, fair, and warm; this began in the ſame manner, and continued ſo till about the 20th, the heat daily increaſing. About this time the air was cooled by ſome moderate ſhowers; ſtorms of hail fell in ſome parts, and in the villages about London, and did conſiderable damage; very little fell in the city. The wind kept generally N.N.E. or N.W.

The motions of the quickſilver in the barometer, were confined within very narrow limits; in the thermometer, the contrary happened, the tranſitions in this inſtrument having been the moſt ſudden and expanſive, that have lately been obſerved. About the beginning of the month ſeveral were ſeized with remittent fevers, which, after moderate bleeding, an emetic, and emptying the firſt paſſages, either went off in a few

days

days, or became intermittent, and ſoon yielded to the cortex.

Several were likewiſe ſeized with a diſorder in the bowels in the nature of a nephritic cholic, with bilious vomitings, obſtinate coſtiveneſs, and pain about the region of the kidnies, and ſometimes a dyſury, though without any certain indication of gravel, or that the parts were affected any other way than by a ſpaſmodic conſtriction from conſent of parts.

Obſervations on the Weather, &c. in July 1753.

Barometer.

Higheſt $30\frac{3}{10}$. Loweſt $29\frac{5}{10}$.

Greateſt variation in one day $\frac{3}{10}$.

Common ſtation $29\frac{9}{10}$.

Thermometer.

Higheſt 72 deg. *viz.* the 7th inſtant; and without doors, in a cool ſhade, 80.

Loweſt 57 deg.

Greateſt variation in one day 5 degrees.

Common ſtation 64 degrees.

The laſt month concluded fair, cloudy, and temperate: this began with ſome hot days, which, towards the middle, were ſucceeded by ſome refreſhing ſhowers: after which the weather continued for the moſt part fair, ſometimes cloudy and cool, at others hot and ſultry. The 7th was a hotter day than any in the two laſt years, in this place.

Apoplexies

Apoplexies have been more than commonly frequent and fatal: even perſons much below the meridian of life, have been ſuddenly ſnatched off by this diſtemper. Some fevers of the low depreſſed kind have appeared; many have been ſeized with inflammations of the bowels; and, in ſome of the neighbouring villages, the ſore-throat, attended with ulcers, has appeared in divers families.

The frequency of apoplexies has furniſhed ſome freſh opportunities of obſerving the effects of bleeding in this diſeaſe, and ſtrengthened the writer's opinion, that this evacuation is far from being always advantageous in this diſtemper: on the contrary, he has ſeen inſtances wherein he thinks it has been attended with the worſt conſequences.

Obſervations on the Weather, &c. in Auguſt 1753.

Barometer.

Higheſt 30 $\frac{3}{10}$. Loweſt 29 $\frac{3}{10}$.

Greateſt variation in one day $\frac{3}{10}$.

Common ſtation 29 $\frac{5}{10}$.

Thermometer.

Higheſt 66 deg. Loweſt 60 deg.

Greateſt variation in one day 5 degrees.

Common ſtation 63 degrees.

The concluſion of the laſt month, and beginning of the preſent, were fair and temperate; towards the middle, the weather became wet, cloudy,

cloudy, and cool, with high winds at S.W.; about the 20th it became fair, clear, and warm, and continued ſo. The wind was variable, often ſhifting to oppoſite points the ſame day: it kept northerly for ſeveral days, but for the moſt part S.W. or S.E. The quickſilver in neither of the inſtruments, had any remarkable motion; whether it roſe or fell, it was ſlowly, nor were the tranſitions from heat to cold, or the contrary, ſudden or very conſiderable.

Many, during this month, have complained of diſorders in the head, before the rains, about the middle of the month eſpecially. Some had a dizzineſs to ſuch a degree as to render it almoſt dangerous to walk abroad; others had acute pains affecting one part of the head only, as the forehead, or down one ſide, with great languors, ſickneſs, and a quick ſmall pulſe: in ſeveral of theſe, after a few days, the diſorder became intermittent, and was eaſily removed by the bark. And moſt of the acute diſeaſes that have occurred in this period, have diſcovered a tendency this way; the head being very much afflicted during the paroxyſm, not ſo much with violent pain, as with great confuſion and dizzineſs, ſo far as to be unable to raiſe it from the pillow without ſuffering greatly. Bleeding moderately at firſt, with an emetic as ſoon as convenient, the ſaline draughts during the paroxyſm, and the bark in ſubſtance given plentifully in the intervals, ſoon removed the complaints in many inſtances. Bliſters gave no relief, but moſt commonly

monly brought on very violent ſtranguries, which ſeems to be their uſual effect in ſummer and in autumnal diſeaſes, more than in thoſe of the ſpring.

Obſervations on the Weather, &c. in September 1753.

Barometer.

Higheſt $30\frac{3}{10}$. Loweſt $29\frac{9}{10}$.

Greateſt variation in one day $\frac{3}{10}$.

Common ſtation $30\frac{1}{10}$.

Thermometer.

Higheſt 66 deg. Loweſt 56 deg.

Greateſt variation in one day 7 degrees, *viz.* the 25th, when it ſunk from 63 to 56, the only day in the whole month in which it either ſunk ſo low, or varied above half ſo much.

Common ſtation 63 degrees.

From the 26th of the laſt month, to the 25th of this incluſive, there have been but five or ſix days on which any rain has fallen, and on moſt of them very inconſiderable quantities; the heat has, at the ſame time, been unuſual in this climate, with the moſt ſettled drought that has of late years been obſerved. For though the wind has blown, in this period, almoſt from every point of the compaſs, yet the barometer has ſtood motionleſs at 30 inches, with the wind at S.E. for days together; a phænomenon very rarely

rarely obſerved, and an indication of the moſt uncommon propenſity to dryneſs.

From this ſtate of the weather, fruits of every kind this country affords, have been ripened to the greateſt perfection; and, if the wines of our own vineyards are at any time to be drank without prejudice, for this ſeems to be the moſt we can expect in this country, the wines of this year's growth ſtand the faireſt chance for it. But, at the ſame time that the dry hot weather has had this effect with regard to fruits, it has burnt up the herbage in the neighbourhood of London altogether, except in the marſhes, and very low meadows; on the higher grounds ſcarce the leaſt appearance of verdure remains; ſo that with the withered ſun-burnt aſpect of the country about us, and the clouds of duſt that are raiſed by the carriages, &c. in every avenue to this metropolis, we reſemble the ſcorched Campagnia, rather than the verdant environs of London.

Bilious cholics, inflammations of the bowels, remittent fevers, with violent head-achs, vomitings, reſtleſſneſs, faintings, high-coloured urine, and bilious ſtools, become more frequent, but not very fatal; the patients bear moderate bleeding well, gentle purgatives of the ſaline kind, and plentiful diluents: bliſters are ſeldom indicated; when applied, they are often injurious, and often bring on unconquerable ſtranguries, to which the ſick are many of them prone, this preſent ſeaſon, where no bliſters have been applied.

---And the writer thinks he has oftener than in one ſeaſon found, that bliſters, after hot dry ſummers, are injurious in common, and perhaps for the very reaſons that render them beneficial, nay abſolutely neceſſary, in moſt kinds of vernal fevers.

In the prëſent remittent fevers, the ſick are diſpoſed to copious ſweats, which weaken but afford no relief. Every plentiful evacuation ſinks them conſiderably, and eſpecially if the diſeaſe is advanced a few days; which is mentioned to guard againſt the imprudent, indiſcriminate uſe of a celebrated powder, long ſince diſcarded from rational practice, on account of its danger and uncertainty, and of the pernicious effects whereof the writer has lately been a witneſs, though adminiſtered in a much ſmaller doſe than is commonly given, and under circumſtances the moſt encouraging to hope for advantage from it.

Obſervations on the Weather, &c. in October 1753.

Barometer.

Higheſt $30\frac{3}{10}$. Loweſt $29\frac{5}{10}$.
Greateſt variation in one day $\frac{5}{10}$.
Common ſtation 29.

Thermometer.

Higheſt 64 deg. Loweſt 52 deg.
Greateſt variation in one day 5 degrees.
Common ſtation 59 degrees.

The

The weather in this month, though more variable than in the preceding, has for the moſt part been mild and temperate, even with the wind at N.E. about which point and the N. it has kept for ſome time. There have been a few ſhowery days, but in general the weather has been fair and cloudy, with ſome heavy miſts.

About the beginning of the month ſeveral were attacked with ſlow remitting and dangerous fevers; which ſtill continue to affect divers. The manner of the attack was various: ſome were attended with a thrilling coldneſs, with very little heat intervening, either night or day, during three or four days; and even, after they were confined to their beds, a ſlight, though almoſt conſtant rigor attended them moſt part of the day, till at length an uneaſy heat took its place, and continued without intermiſſion many days. But this was not the caſe in all: the beginning was more ſenſibly felt by ſeveral; the rigor more violent and of ſhorter continuance; the ſucceeding heat, though more intenſe, of a ſhorter duration; and the concomitant ſymptoms the more natural. Perſons of a freſh florid habit were generally ſeized in this manner, and moſtly recovered; the diſeaſe either ſpeedily terminating in an intermittent, or decreaſing about the 14th with a thick lateritious ſediment: but ſuch as were of a ſquallid, or pale ſwarthy complexion, and were ſeized with this fever, were attacked in the manner firſt deſcribed: the beginning was obſcure, the patient often went abroad, with chil-

ling rigors, many days, and applied for help when the diſeaſe was advanced to ſuch a period, as to admit of very little either from art or nature. The freſh and ſanguine bore bleeding repeatedly, to advantage; the head-ach, reſtleſſneſs, and heat, often abating after it. But the others did not receive the like benefit: a moderately warm and cardiac regimen; keeping the ſick from profuſe ſweats, or any weakening evacuation; ſupplying thin diluting liquors often, and in ſmall quantities, ſeemed to afford the greateſt relief.---Rheumatiſms have been frequent in this month, as is common at this ſeaſon, and probably as much owing to a want of accommodating the cloathing to it, as to the variableneſs of the weather.

Obſervations on the Weather, &c. in November 1753.

Barometer.

Higheſt $30\frac{3}{10}$. Loweſt $29\frac{4}{10}$.

Greateſt variation in one day $\frac{5}{10}$.

Common ſtation $29\frac{8}{10}$.

Thermometer.

Higheſt 58 deg. Loweſt 45 deg.

Common ſtation 49 degrees.

Greateſt variation in one day 7 degrees.

The weather in this month for the moſt part has been cloudy, cold, and fair, with ſharp froſts, but

but of no long continuance, and interrupted with cold rain; the wind frequently at N. W.

The ſame kind of fever as mentioned in my former, has continued to ſhew itſelf during this month, and has terminated fatally in many inſtances, and chiefly, perhaps, from ſlower and imperceptible approaches. Often has it affected the ſick great part of a week before they have been induced to ſeek any relief, when the moments of affording it effectually were paſſed. Copious evacuations of any kind were obſerved to be injurious; the ſick were not often diſpoſed to any, except profuſe ſweats, which were never found, that I know of, relieving.

Diſorders of the bowels were frequent, in ſome with obſtinate coſtiveneſs, with a diarrhœa in others, and generally yielded to the known methods.

Obſervations on the Weather, &c. in December 1753.

Barometer.

Higheſt 30 inch. 4 deg.
Loweſt 29 inch. 22 deg.
Greateſt variation in one day 7 deg.
Common ſtation 29 inch. 8 deg.

Thermometer within doors.

Higheſt 58 deg. Loweſt 40 deg.
Greateſt variation in one day 7 deg.
Common ſtation 47 deg.

Thermometer without doors.

Higheſt 55 deg. the 22d inſt.

Loweſt 29 deg. the 8th.

Greateſt variation in one day 10 deg. *viz.* the 12th, from 40 to 50.

The laſt month concluded with hard froſt, the weather very cold, the wind N. or N. W. The beginning of this month likewiſe was cold and froſty, but often dark, thick, hazy weather. About the 10th we had ſome ſnow, but this was ſoon carried off by warm rain, the wind ſhifting ſuddenly from N. E. to S. E. and S. W. where it continued to the 25th, the weather being uncommonly warm, though dark and ſhowery. Upon the whole, we have had greater viciſſitudes, and more ſudden tranſitions from cold and dry to warm and moiſt, in this month, than has happened in any one for a conſiderable time paſt.

About the beginning of the month, during the ſharp froſt, ſeveral were ſeized with the ſmall-pox, of a dangerous kind. The puſtules appeared in ſeveral on the ſecond day, and without much previous indiſpoſition. The fever of eruption was far from being violent, and the pulſe often continued as ſlow as in perfect health, and much ſmaller till the 4th or 5th day from the eruption, the ſick in the main delirious in the night, and no way abating as the ptyaliſm, which was in many caſes profuſe, and boded danger, came on. About the 7th the pulſe became more

quick, but not more ſtrong; heat, reſtleſſneſs, and delirium increaſed, and if the patient ſurvived the 11th, it was often with great difficulty, and generally to undergo freſh dangers from the ſecondary fever; but a peripneumony proved fatal to ſeveral about the eleventh.

The puſtules, inſtead of filling with a kindly yellowiſh matter, or appearing of this colour externally, were, in all that I ſaw, of a pale cream-coloured aſpect, running into one another on the face, with here and there, both on the face and limbs, ſmall mortified cruſts, and the whole aſpect as if covered with a wetted parchment.

The cauſes that produced the ſlow, treacherous, remittent fever, mentioned in a preceding account, ſeem to have produced the like unfavourable diſpoſition of the habit in this. The attack in both was not alarming; the progreſs ſlow and fallacious; the approach of the criſis terrible, and too often fatal.---However, the diſeaſe is by no means general; many of thoſe who have it, 'tis true, have it in a pretty ſevere manner, yet many eſcape. A decoction of the Cortex, with ſmall doſes of Conf. Damocrat. *viz.* 10, 15, to 20 gr. given in the languid ſtate, has been of ſervice in ſome caſes; exchanging this regimen for a mild, demulcent, yet moderately cordial regimen, as the diſeaſe advanced.

A caſe of an unuſual nature, the ſubject conſidered, has probably occurred to many practitioners within this month or ſix weeks. It appears at leaſt unuſual to the writer, and he there-

fore mentions it. He has been called to ſeveral children, and to none much above ſeven years of age, and girls chiefly, who have had the jaundice. He has heard from others, that the like caſes had occurred to them. The writer found that a grain, or gr. *ſs* of Calomel, in a pill, with Tereb. *q. ſ.* every night, and a few ſpoonfuls of the ſaline mixture two or three times a day, ſoon took off the yellowneſs, coſtiveneſs, and high-coloured urine; and a tea-ſpoonful of the Vin. Chalybeat. in chamomile-tea, reſtored their appetite and vivacity, which were always greatly affected, and ſeemingly more than even in adults.

Obſervations on the Weather, &c. in January 1754.

Barometer.

Higheſt $30\frac{5}{10}$. Loweſt 29.
Greateſt variation in one day $\frac{5}{10}$.
Common ſtation $29\frac{8}{10}$.

Thermometer within doors.

Higheſt 55 deg. Loweſt 40 deg.
Greateſt variation in one day 5 deg.
Common ſtation 45 deg.

Thermometer without doors.

Higheſt 48. Loweſt 25.
Greateſt variation in 24 hours 12 deg.
Common ſtation 40 deg.

The laſt month ended fair, froſty, cloudy, and very cold; wind N.E. This began in the ſame manner,

manner; but the wind ſuddenly ſhifting to the S. W. the weather became leſs cold, but ſtill inclined to froſty. About the middle we had ſome heavy rains, the cold moderate, and the weather continued variable till towards the end, without any remarkable exceſs in any reſpect.

Two ſingular phænomena appeared in the barometer in the courſe of this month, *viz.* about the 8th the quickſilver ſtood at 29.2, the wind northerly and fair. In common, when it ſtands ſo low we ſeldom fail of heavy rains, high winds, or ſnow; but none of theſe happened in the neighbourhood of this place; nor had we any accounts of deep ſnows or much rain in the north about this time; though I have never known the like circumſtance happen without one or other of them falling plentifully to the northward.--- The other phænomenon was the reverſe to this. While the quickſilver ſtood ſeveral days together at 30.5, we had ſoutherly winds, with rain, and the weather temperate. It is difficult to account for this, unleſs we ſuppoſe a current of wind from the N. or N. E. to have paſſed above the ſouthern ſtream, and in a greater quantity.

The ſudden tranſitions in the former month, and the variable temperature of the preſent, ſeemed to render acute diſeaſes, for a time, more frequent and fatal. Fevers of the kind before mentioned continued; plentiful bleeding almoſt always brought on very alarming ſymptoms. It ſeemed, however, neceſſary to bleed moderately once, and ſometimes, by cupping, to mitigate the head-ach,

head-ach, of which all the patients complained, ſome more ſome leſs. Bliſters applied early increaſed the heat; and, if a ſweating regimen was purſued, about the ſeventh or eighth day ſmall red irregular *ſtigmata*, not round, as regular *petechiæ*, ſhewed themſelves about the neck, breaſt, and arms, in great numbers, appearing juſt as if an eruption was about to follow; but they never roſe above the ſurface of the ſkin.---Avoiding all immoderate evacuations; keeping the patient moderately covered; ſupporting his ſtrength with proper liquids, without loading him with too much of them; promoting the circulation gently with the milder diaphoretics; and applying bliſters, ſucceſſively, as the falling pulſe ſeemed to indicate their neceſſity, were the means of conducting ſome, who had this ſpecies of fever, through very imminent dangers: under which circumſtances the diſcharges from the bliſters ſeemed to be of ſingular advantage; for it happened, in divers inſtances, that with the common dreſſings only, bliſters on the arms, where they are rather more readily diſpoſed to heal in common than in ſome parts of the body, have kept open a week or ten days, nay, in one caſe, a fortnight, the matter being often at firſt thin and ſanious, but becoming gradually laudable and plentiful.

Rheumatiſms were alſo frequent about the breaking up of the froſt, and the muſcles of the thorax being in ſome caſes affected, made it difficult to diſtinguiſh in what degree the internal

parts

parts likewiſe ſuffered; which nevertheleſs is a circumſtance of great moment, as the method which would be the moſt likely to remove a genuine inflammation of the lungs or pleura, would often increaſe a rheumatic affection of the muſcles concerned in reſpiration, and bring on that very diſeaſe which it was intended to remove, *viz.* an inflammation of the lungs, for want of a juſt dilatation of the thorax. This, however, is not deſigned to prevent bleeding in the above-mentioned caſes, but as a caution to ſome, who may have been taught to think, that copious bleeding is indicated, whenever a patient complains of pain in any part of the region of the thorax.

Obſervations on the Weather, &c. in February 1754.

Barometer.

Higheſt 30 $\frac{6}{10}$. Loweſt 29 $\frac{5}{10}$.

Greateſt variation in one day $\frac{5}{10}$.

Common ſtation 30 $\frac{2}{10}$.

Thermometer without doors.

Higheſt 48, the 13th inſtant.

Loweſt 25, the 6th and 7th. Severe froſt.

Greateſt variation in one day 17 deg. between the 1ſt and 2d inſt. when the quickſilver roſe from 27 to 40 deg.

The

The froſt, which began about the 26th of the preceding month, became intenſe in a few days, and continued till the 9th, when it broke up with a ſudden, but a very cold thaw, with ſleet and heavy cold rains. After this the weather became more temperate, the mornings froſty and ſharp, but the air in the day commonly ſerene, ſeaſonable, and fair, and ſo continued to the 26th.

The quickſilver in the barometer has kept, during this changeable weather, within very confined limits, the ſeaſon conſidered. In the thermometer it has ſeldom varied more; nor could it be expected to happen otherwiſe. For the ſatisfaction of thoſe gentlemen who employ themſelves in the like obſervations, it is thought proper to acquaint them,

That the inſtrument by which theſe are made, is graduated according to Fahrenheit's ſcale, and was made by a workman of reputation.

That it is placed without doors, in a court, one ſtory from the ground, in a ſituation ſheltered from any current of wind, as well as ſecured, by the height and ſituation of the neighbouring houſes, from the direct or reflected influence of the ſun.

That the uſual hour of obſervation is about eight in the morning, in winter, ſeven in ſummer; and that the place is near the center, and one of the moſt populous parts of the city.

It may be likewiſe obſerved, that the inſtrument

ment is diſtant about two inches from the wall, and has as little connection as poſſible, to be ſecure, with any ſolid body. The ſcale is wood, and touches the tube in very few points.--- Though the writer imagined he had choſen a very proper place within doors, to diſcover the general temper of the air, yet, from a ſtrict attention, he finds that many cauſes concur to render this inſtrument uncertain within doors, in any ſituation, and he doubts it is ſtill liable to many exceptions without.

Thus far no diſeaſes have appeared in the city or ſuburbs, ſo far as the author knows, that have any thing peculiar to merit a farther deſcription at preſent.

Obſervations on the Weather, &c. in March 1754.

Barometer.

Higheſt $30\frac{6}{10}$. Loweſt $29\frac{2}{10}$.
Greateſt variation in one day $\frac{5}{10}$.
Common ſtation $30\frac{2}{10}$.

Thermometer within doors.

Higheſt 51.
Loweſt 38 deg. the 13th and 18th. Hard froſt and much ſnow.
Greateſt variation 6.
Common ſtation 44.

Thermometer

Thermometer without doors.

Higheſt 46. Loweſt 29, the 12th. Froſt.
Greateſt variation 6.

Common ſtation 37.

The unuſual ſeverity of the weather in this laſt month claims a particular notice, as the like, perhaps, hath not been obſerved in this country for many years. The laſt month ended rather temperate and fair, the barometer without doors keeping always above 40, and within doors commonly near 50. About the 5th ult. the wind ſhifted from S.W. to N.E. and the weather from temperate and clear became gradually more cold and cloudy. On the 9th it began to ſnow, freezing hard at the ſame time, and continued ſnowing, more or leſs, almoſt every day to the 25th, the time when this monthly account concludes. During this time the weather was for the moſt part unuſually dark and cloudy, the wind often high, and from the N.W. N. or N.E. points.

Diſorders of the breaſt were, during this time, both frequent and fatal. Lax corpulent habits, ſubject to coughs and aſthmatic complaints, ſuffered extremely. A thin irritating defluxion, with little appearance of a fever, began, and produced violent and inceſſant coughing. Bleeding afforded ſome temporary relief; but, if copious, weakened. Diſcharges by ſtool, either ſpontaneous or artificial, gave little relief. Plentiful expectoration was the moſt beneficial; but the quantity to be diſcharged too often exceeded the

force

force of nature; and, notwithſtanding the application of bliſters, the uſe of mild balſamics mixed with volatiles and the more ſtimulating expectorants, (as the caſe ſeemed to require all) too often proved unſucceſsful. Palſies were likewiſe not uncommon; and the writer thinks he has met with freſh cauſe to ſuſpect, that the too free and frequent uſe of the lancet, in ſuch complaints, ſometimes ſubjects both the patient and phyſician to inſuperable difficulties.

Obſervations on the Weather, &c. in April 1754.

Barometer.

Higheſt $30\frac{3}{10}$. Loweſt $29\frac{5}{10}$.

Greateſt variation in one day $\frac{4}{10}$.

Common ſtation 30.

Thermometer within doors.

Higheſt 56. Loweſt 41 deg. the 25th.

Greateſt variation in one day 9, the 18th, from 50 at night to 41 in the morning. Hard froſt and ſnow.

Common ſtation 50.

Thermometer without doors.

Higheſt 54. Loweſt 32.

Greateſt variation 7, the 6th, from 47 to 54.

Common ſtation 41.

Greateſt variation between morning and noon 10.

The unuſual ſeverity of the weather, both in this and other parts of Britain, during this month, will probably be long remembered. A few days before

before this account concludes, the cold indeed began to relax, and there was now and then a day, towards noon, when the air was temperate; but in general it has been cold and dry to an extreme degree; the froſts ſharp, and accompanied with ſnow and hail. From this ſtate of the weather, every appearance of ſpring has been exceſſively retarded, and the powers of vegetation in a manner locked up. Scarce an alder-leaf fully expanded, and the lilies but half opened; from theſe it will be eaſy to judge of the reſt.

Thus far, however, the general health has not ſuffered by it, nothing like an epidemic having ſhewn itſelf in the city, nor the ſporadics numerous. Spaſmodic or rheumatic pains of the breaſt have affected ſome, but have been ſoon removed by moderate bleeding, ſmall doſes of camphire and nitre mixed, with laxative only and volatile medicines, as occaſion required.

Obſervations on the Weather, &c. in May 1754.

Barometer.

Higheſt $30\frac{1}{10}$. Loweſt $29\frac{6}{10}$.

Greateſt variation in one day $\frac{3}{10}$.

Common ſtation $29\frac{9}{10}$.

Thermometer within doors.

Higheſt 61 deg. Loweſt 53.

Greateſt variation in one day 6 degrees.

Common ſtation 57 degrees.

The

The thermometer without doors has not been ſo carefully obſerved this month, as to furniſh a regular account of it.

The weather about the end of the laſt month was temperate and fair, the wind S.W. it veered ſoon to the N.E. and the air grew cool and cloudy, though dry. Towards the middle of this month it became more temperate, the wind ſoutherly, and at length ſucceeded ſome plentiful warm rains about the 22d, which continued with ſome interruptions a few days, when the weather again became cool and fair.

Perhaps there are but few who can remember ſo ſudden an alteration in the face of vegetative nature, as hath happened in this month: ſpring, inſtead of her uſual progreſs, which in this country has been interrupted and ſlow, came upon us at once, and the ſcene which had been ſo long dreary and deſolate, was ſuddenly covered with verdure; the trees bloſſomed into fragrance and beauty, and the pledges of plenty were every where ſcattered with the utmoſt profuſion. Thoſe who repined at the delay, and were ready to wiſh the power of rain and ſunſhine in their own hands, are once more detected in the folly of diſcontent, and it is to be hoped they will at laſt learn to acquieſce, not only with chearfulneſs, but gratitude, in the diſpenſations of that unerring goodneſs which preſides over univerſal nature, and has ſo long bleſſed this country with *health and fruitful ſeaſons.*

In reſpect to diſeaſes, none have appeared that

deſerve the name of epidemic. Rheumatiſms, vernal intermittents, and conſumptive complaints, have been the moſt frequent, but not more ſo than in other ſprings.

The ſmall-pox, which was beginning to ſpread in ſome parts of the town, ſeems to be upon the decline; except by inoculation; for this practice daily gains ground, notwithſtanding ſome inſtances now and then occur, that are not attended with the happy ſucceſs one could wiſh for. In general, however, both the favourableneſs of the diſeaſe itſelf, and the abſence of various ill conſequences attending it in the natural way, are ſo much in favour of inoculation, that in time it ſeems likely to become the general practice, and may thereby ſecure to the ſtate a multitude of uſeful lives, to the parties themſelves tranquillity of mind, and to many of them agreeableneſs of perſon.

It may again be proper to remind thoſe who are engaged in this practice, that the ſlighteſt ſcratch with the point of a needle, or any other inſtrument that will juſt make the blood ſtart through the ſcarf ſkin, will be ſufficient; and that much leſs than the tenth part of an inch of fine thread, that has been drawn through a ripe puſtule, will be enough to produce the diſeaſe. And alſo, that the matter ſhould not be applied, by the perſon who has taken it from the variolous patient, ſoon after he has procured it, for the reaſons alledged in a former *Magazine*, (vol. xxiii. p. 218.)

Obſervations

Obſervations on the Weather, &c. in June 1754.

Barometer.

Higheſt $30\frac{4}{10}$. Loweſt $29\frac{7}{10}$.
Greateſt variation in one day $\frac{3}{10}$.
Common ſtation $29\frac{8}{10}$.

Thermometer within doors.

Higheſt 65 deg. Loweſt 57.
Common ſtation 61 degrees.
Greateſt variation in one day 4 degrees.

The weather at the end of the laſt month was cool, cloudy, and dry; at the beginning of this it became more warm and clear; a few days about the middle were ſtill warmer; but as the month advanced, the weather grew more cloudy and cool, except ſome ſudden gleams of heat from a few hours of a clear mid-day ſun now and then, which raiſed the thermometer without doors conſiderably, while within doors it remained unaltered, varying not more than about four degrees in any one day or night, as far as occurred to the obſerver, in all this period.

The wind has been chiefly S.W. or W. and moſtly pretty high, which both covered the ſky with clouds, and kept off the rains from theſe parts, except now and then ſome acceptable ſhowers, and a wet day or two near the end of the month.

The ſame kind of remittent fevers, mentioned in a preceding month, have appeared, though not in great numbers; irregular intermittents have likewiſe been frequent, eſpecially periodical hemicranias, which ſoon gave way to the Bark, with ſo much Rhubarb, or Tinct. Guaiac. Volat. added, as kept the belly rather lax than coſtive. Coughs, rheumatic pains affecting different parts of the thorax, and other diſeaſes of the breaſt, have been much more frequent in this month than uſual, cauſed perhaps rather by the too early change of dreſs, than the peculiar conſtitution of the air. Bleeding in moſt was beneficial; a repetition was ſometimes neceſſary. Mild diaphoretics, anodynes, pectorals, and warmth, were generally ſucceſsful. The ulcerated ſore-throat has juſt begun to ſhew itſelf, with its uſual ſymptoms; it yields to the common remedies, and is exaſperated, as it always has been in general, by bleeding and large evacuations. A cataplaſm of Ther. Androm. with a ſmall quantity of Sal. C. C. ſpread thick, and applied externally from ear to ear, ſeems to have afforded ſpeedy relief in ſome caſes, not however omitting cordials internally at the ſame time.

Obſervations

Obſervations on the Weather, &c. in July 1754.

Barometer.

Higheſt $30\frac{2}{10}$. Loweſt $29\frac{3}{10}$.

Greateſt variation in one day $\frac{5}{10}$.

Common ſtation 30.0.

Thermometer within doors.

Higheſt 68 degrees, the 22d. Wind S.E. Very warm.

Loweſt 60.

Greateſt variation in one day 5 degrees.

Common ſtation 62 degrees.

The laſt month ended cool, ſhowery, with briſk weſterly winds; the beginning of this was fair, clear, and temperate: towards the middle it became more wet and cloudy, and continued ſo, with the intervention of a very few warm days, to the end of the month. The wind during the whole was variable, but kept generally to W. or S.W. and ſometimes pretty briſk.

About the beginning of the month, ſeveral were attacked with the *eryſipelas*, affecting chiefly the head and face, though ſometimes appearing on other parts of the body. Mild diaphoretics, with anodynes to abate the painful ſoreneſs, not to ſtupify; emollient clyſters, to keep the belly open, not lax; diluting liquors moderately in regard to quantity, and rather cool than hot, in a few days reſtored the patients to

their uſual health: nitre diſpirited them; and, without ſome anodyne at night, they were diſpoſed to watchfulneſs and delirium, as in the ſmall-pox. As the month advanced, apoplexies and paralytic complaints became very frequent, and we ſtill hear of one or other almoſt daily attacked. To what can this be owing? Sudden tranſitions from heat to cold, or from cold to heat, often produce theſe complaints: but, excepting a day or two, the weather has been uncommonly equal; and none of the ſenſible qualities have remarkably predominated. If nothing in the conſtitution of the air appears capable of producing ſuch complaints, to what other general cauſe can we have recourſe? In reſpect to diet, we change nothing in our common courſe, except a more plentiful uſe of vegetables; in which term muſt be underſtood to be included fruits of all ſorts, as well as roots and greens. But theſe have ſeldom been conſidered as productive of ſuch diſorders.---They may, however, by accident, contribute in ſome conſtitutions to bring on the above-mentioned diſorders, that is, by their quantity.---We ſeldom are called to apoplectic patients, but, upon enquiry, we learn that ſome unguarded meal has preceded, and that, within a very few hours before the attack, they have made a repaſt which, either in reſpect to quantity or quality, the by-ſtanders themſelves admit to have been improper.---It is therefore mentioned as a caution to all, who either from their make and time of life have reaſon to apprehend

apprehend they are expoſed to the diſeaſe above-mentioned, or have already had ſome ſlight attack of it, that as they wiſh to prolong their lives, they would avoid full meals, but more eſpecially ſuppers. The conſtant and abundant uſe of tea, though for a very different reaſon, ſeems likewiſe capable of contributing its ſhare to the increaſe of theſe diſorders: and, indeed, the continued uſe of this exotic ſeems to demand the attention of the faculty, and their ſteady and unanimous oppoſition, if its effects ſhould appear to be as certainly, though inſenſibly, injurious to the body, as the conſumption of time, and its other ill conſequences, are undoubtedly to the ſtate.

Obſervations on the Weather, &c. in Auguſt 1754.

Barometer.

Higheſt $30\frac{2}{10}$. Loweſt $29\frac{7}{10}$.

Greateſt variation in one day $\frac{3}{10}$.

Common ſtation 30. 0.

Thermometer within doors.

Higheſt 69 degrees at night, the 20th. E.

Loweſt 60.

Greateſt variation in one day 4 degrees.

Common ſtation 64 degrees.

As the laſt month ended, ſo this began, cloudy, cool, and wet: the weather continued thus till

about the middle, when the wind ſhifted to the E. and brought a fair, warm, and agreeable ſeaſon. After a ſtorm of thunder, lightning, and heavy rain, the 22d in the night, with a S.E. wind, the air continued ſultry, and the weather wet, till the period when this account concludes.

The motions of the quickſilver, both in the barometer and thermometer, have been very ſlow, and the riſe and fall in each by ſhort gradations. In the thermometer, ſuſpended in the ſhade without doors on the 11th in the morning, the mercury ſtood at 58; 2 degrees lower than within doors, any time this month; and roſe the 15th and 19th to 75 at noon, the higheſt it was obſerved to be.

A dangerous remittent fever, and the ſmall-pox, have been the moſt common acute diſeaſes that have occurred in this month. The former was fatal to many; and though it often continued to the 14th or 17th day, yet it was extremely difficult to diſcover the *juvantia* or *lædentia*, except in regard to bleeding, which was moſt commonly injurious, as thoſe who loſt the moſt blood, and at the greateſt diſtance from the firſt attack, ſuffered the moſt, were the ſooneſt delirious, convulſed, and carried off. The early application of bliſters ſeemed no leſs injurious. A gentle emetic, and mild calming diaphoretics, the bed-cloaths light, the room airy, but not cold, with thin diluting liquors to ſatiety, not

to

to load, were circumſtances of moment to the patients eaſe, as well as recovery.

The ſmall-pox were frequent in many parts of the city and eaſtern ſuburbs eſpecially. In general the kind was mild, diſtinct, and favourable. Out of ſixteen, who had the diſeaſe in a certain diſtrict, of different ages, one only died; but in common a much larger proportion miſcarried. And it is to be remarked, particularly, that though in general the ſmall-pox was of the ſort deſcribed, yet where it was otherwiſe, it was ſo in an extreme degree, with an uncommon proneneſs to malignancy. In two caſes that occurred, where the load of ſmall-pox was not remarkably great, the ſubjects young and healthy, and no obvious miſmanagement, large livid *petechiæ* appeared ſoon after the eruption, daily increaſing in extent and deepneſs of colour to the 3d or 6th, when, after days and nights of inceſſant anxiety and delirium, and the fruitleſs application of ſuch remedies as ſeemed the moſt ſuitable, the diſeaſe proved fatal. The author does not remember ever to have ſeen inſtances of ſo virulent a kind, appearing at a time when the general tendency was to the mildeſt and moſt favourable.

Obſervations on the Weather, &c. in September 1754.

Barometer.

Higheſt $30\frac{5}{10}$. Loweſt $29\frac{9}{10}$.
Greateſt variation in one day $\frac{2}{10}$.
Common ſtation $30\frac{2}{10}$.

Thermometer within doors.

Higheſt 67 deg. Loweſt 57.
Greateſt variation in one day 7 degrees.
Common ſtation 63 degrees.

The weather during this month has been uncommonly dry, the air, for the moſt part, temperate and ſerene; ſometimes approaching, in the middle of the day, to ſultry, whilſt the mornings and evenings were rather cold than temperate. On the 7th and 8th we had ſome gentle ſhowers, the wind S. W. and ſomewhat high; the reſt of the month was dry, and the wind northerly.

Choleras, inflammations of the bowels, rheumatiſms, and intermittents, have been the moſt common diſeaſes; but a dangerous remittent fever, though not very frequent, has been the moſt alarming; the acceſs is commonly vehement, the rigor like that of a regular tertian, the ſubſequent heat intenſe, which generally continues ſo long as to ſhew that it is not of this genus: partial ſweats ſucceed, which afford no

relief, but leave the laſſitude and pains of the head and back as afflicting as at firſt. In this ſtate it is common for thoſe who are called in, to order bleeding. The blood is florid, not very denſe; the ſerum of a deep yellow; the urine at the ſame time is crude and high-coloured. Bleeding often mitigates the febrile ſymptoms conſiderably; but they return in twenty-four hours, and induce ſome to bleed a ſecond time. The reſpite from this ſecond bleeding is frequently more perceptible than the firſt, but a delirium often follows the next night, with a dry tongue, quick pulſe, high-coloured urine, looſe acrid ſtools, catchings, watchfulneſs, and the moſt alarming ſymptoms. Now and then they hold out to the 17th or 18th day, but more commonly drop off about the 14th or 15th.

Obſervations on the Weather, &c. in October 1754.

Barometer.

Higheſt $30\frac{4}{100}$. Loweſt $29\frac{2}{100}$.
Greateſt variation in one day $\frac{5}{100}$.
Common ſtation $30\frac{1}{100}$.

Thermometer within doors.

Higheſt 65 deg. Loweſt 52.
Greateſt variation in one day 7 degrees.
Common ſtation 56 degrees.

Thermometer

Thermometer without doors, in the morning.

Higheſt 64. Loweſt 43.

Greateſt difference betwixt morning and noon on the ſame day 15 degrees, *viz.* on the 15th inſtant, from 43, the loweſt, to 58.

Greateſt variation betwixt any two mornings 11 degrees, *viz.* from 44 to 55, between the 8th and 9th inſtant.

Common ſtation 54 degrees.

If the preceding account is more prolix, it is with a deſign to make it the more uſeful: the reader will be pleaſed to remember, that it is a record of facts, which though at preſent ſeem but little intereſting, yet, in future time, may be of very important uſe. What inſtruction would not ſomething of this kind have afforded, had it commenced a century ago, and been regularly continued to the preſent time?

The end of the laſt month was for the moſt part fair, clear, and temperate, and likewiſe the beginning of this. On the 6th we had the firſt ſhower that had fallen for ſome weeks, and on the 9th ſome heavy rain: except ſome intervening ſhowers, the reſt of the month was generally fair, and the weather favourable as to heat; now and then a few warm days, with very little wind, and at other times a briſk cool weſterly breeze, or northerly and cold.

The fever, mentioned in the laſt account, did not wholly diſappear till the weather became more moiſt and cool; the preceding aduſt temperature

perature having manifeſtly contributed to increaſe it.

Rheumatic pains affecting various parts about the thorax, intermittents, and ſome inflammatory rheumatiſms, are now more common, which generally yield to the ordinary treatment.

But before we altogether diſmiſs the fever above-mentioned, it may not be improper to remark, that ſcarcely any thing in the practice of medicine requires greater judgment, than to determine, at the acceſs of fevers, whether bleeding is proper or not, and to what quantities. In the preſent inſtance, moderate bleeding once, ſeldom was beneficial, but to repeat it, was moſt commonly injurious. The writer does not ſay this with a view to inſinuate, that none but a few are judges, in order to promote their advantage; but merely with a deſign to prevail upon thoſe who are often firſt called, to conſider, that if the fever is of the low depreſſed kind, they are taking away that force which will ere long be wanted, and which no art can reſtore.

Next to bleeding, bliſters are commonly applied, and they often follow each other immediately; ſo that one often finds bleeding, bliſtering, ſweating, and perhaps a repetition of all, have been promiſcuouſly ordered in the ſpace of a very few days, while, from the general diſorder, it was ſcarcely poſſible to determine whether any, or which of theſe proceſſes was neceſſary. Theſe things are not ſaid with a view to accuſe or reproach, but to excite a juſt and neceſſary

ceſſary conſideration of what is proper, and not what is cuſtomarily done. Bleeding is, doubtleſs, often neceſſary in fevers; the pulſe, the conſtitution, or the ſeaſon, moſtly point out the time and the quantity; which, if it is at all proper, is moſt commonly ſo within the firſt four, five, or ſix days. This evacuation, with diluents and proper regimen, will often take off a fever without any other aſſiſtance. But in regard to bliſters, their early application muſt in moſt caſes be prejudicial. Where bleeding is proper, they are commonly improper; they cannot take off a fever, they have no tendency to it, any otherways than by keeping up the languent circulation, where the pulſe rather grows feeble, and the ſtrength declines; here they are a noble remedy: a prudent ſucceſſion of them often does wonders towards the acme of the fever, and not only promotes a ſalutary criſis, by the ſtimulant invigorating quality, but by opening a favourable drain for the critical diſcharge itſelf. We loſe theſe advantages if we bliſter early; we hurry on the already too precipitate courſe of the blood and juices, and deprive ourſelves of a reſource, than which medicine hardly affords any one more efficacious. Emptying the firſt paſſages prudently at the firſt is ſcarcely ever prejudicial in this or any other fever: bleeding in this is moſt commonly injurious; and bliſters early applied, I believe, are ſeldom uſeful in fevers, if not conſtantly detrimental.

Obſervations

Obſervations on the Weather, &c. in November 1754.

Barometer.

Higheſt $30\frac{3}{10}$. Loweſt $28\frac{3}{10}$.
Greateſt variation in one day $\frac{6}{10}$.
Common ſtation $29\frac{3}{10}$.
Total of mornings obſervations $920\frac{3}{10}$.

Thermometer within doors.

Higheſt 60. Loweſt 50.
Greateſt variation in one day 4.
Common ſtation 52.
Total of mornings obſervations 1716.

Thermometer without doors.

	Morning.	Noon.	
Higheſt - - -	56	64	27th ult.
Loweſt - - -	39	47	27th ult.
Common ſtation	48	$52\frac{1}{2}$	

Greateſt variation from morn to noon 10.
Total - - - 1461 1638.

The quickſilver in the barometer ſunk lower on the 9th and 10th inſtant, than it has been known to do during the courſe of theſe obſervations; ſo low as to 28 inches 8-tenths, the weather at the ſame time fair, and, the ſeaſon conſidered, clear and temperate; the wind S. E. and rather calm. Theſe circumſtances are mentioned, as they are uncommon with a S. E. wind. The quickſilver, indeed, almoſt always ſinks, but ſeldom

dom low, without very high winds, or much rain, neither of which happened at that time, nor did any remarkable wet weather enſue about this place. It was conjectured that much rain might then be falling in diſtant parts, which from the daily papers, and other accounts, was ſoon after found to be the caſe. And it has more than once been obſerved, that if the quick-ſilver keeps very low, with a northerly wind, much ſnow is then falling to the northward, and perhaps at a very great diſtance; and alſo that if it is low with a S.E. and fair, heavy rains are then falling to the ſouthward, though, perhaps, neither ſnow or rain appear at the place of obſervation.

The weather during this month, till within a few days of its concluſion, has for the moſt part been fair and clear, though there have been ſome dark, cold, and rainy days, but generally clear, temperate, and the winds eaſterly. Rheumatiſms have been very frequent and obſtinate. Many have been ſeized with catarrhal coughs, and conſumptive habits have ſuffered greatly. The fever mentioned in the preceding accounts ſtill continues; the cautions hinted before are ſtill neceſſary: bleeding almoſt in the ſmalleſt quantity is injurious, and a repetition generally fatal.

REMARKS

*REMARKS

ON THE

NEUTRAL SALTS OF PLANTS,

AND ON

TERRA FOLIATA TARTARI.

CHEMISTS, who prepare the lixivial Salts of Vegetables, generally take care, by the means of hot water, and ſometimes repeated affuſions of it, to get every thing out of the aſhes that is ſoluble; and when they evaporate this ſolution, they employ the ſalt which is obtained from it as a pure alcali in other operations, either not knowing or neglecting the Neutral Salt, which Boerhaave ſays † is mixed with it, and is *ſui generis*. In an operation which I was lately employed in, the neceſſity of conſidering the effects of this Neutral Salt was evi-

* Written in the year 1736, and inſerted in the 5th volume of "Medical Eſſays and Obſervations, publiſhed by "a Society in Edinburgh," page 147.

† Chem. Proc. 14.

dent, and I could determine the genus to which the greater part of it belonged.

An ingenious Chemiſt of my acquaintance, intending to make a large quantity of *Terra foliata Tartari*, uſed for that purpoſe the *lixivial Salt of Fern*, carefully made in the country by a perſon well ſkilled in practical chemiſtry, careful and exact. Some of this ſalt was fluxed, the reſt was a clean lixivial ſalt; each kind was ſaturated by itſelf with ſtrong diſtilled vinegar, eight or nine times the weight of the ſalt being ſufficient of the vinegar to fully ſaturate the alcali of both parcels; whereas uſually fourteen or fifteen times the weight of the ſalt is requiſite of the vinegar to make a perfect ſaturation.

The ſaturated liquors being filtrated, and carefully evaporated to a mellaginous conſiſtence, hiſſed and crackled where it hardened on the ſides of the veſſel, and did more ſo the nearer they came to dryneſs, ſhewing hardly any marks of a diſpoſition to flow, which commonly happens when the ſaline liquor is ſo far evaporated.

No methods which the operator, who is a very expert artiſt, could then fall upon, ſerved to make the proceſs ſucceed.

The Chemiſt having informed me of the caſe, we could diſcover no fault in the materials, veſſels, or operation; but, ſuſpecting the Neutral Salt to be the cauſe of the proceſs not ſucceeding, we diſſolved all the refractory maſs in warm water, ſet it to cool, and had a conſiderable quantity

quantity of neutral cryſtals, ſeveral of them exactly reſembling thoſe cryſtals delineated in tab. I. of your vol. i. which were procured by Dr. Plummer from *Moffat* water; only ours were more perfect, which was owing probably to the large quantities of materials we had. Moſt of the cryſtals were cubical, which, joined differently, and mixed with other ſalts, made a ſurprizing variety of figures, which cannot well be deſcribed in words; but I have ſent ſome of them of different ſhapes in a box. It was plain from their figure and taſte, and by experiment, that common *Sal marinum* made up a great part of what we had; the reſt might not unjuſtly be called partly a *Sal Polychreſt*, partly the eſſential ſalt of the plant.

We were obliged to repeat this operation for obtaining thoſe cryſtals, before we could obtain a Salt which flowed and foliated; the cryſtals depoſited each time were more bitter and more pungent, though in form reſembling the firſt we got; the *Terra foliata* did not flow nor foliate ſo freely, nor were the foliations ſo large or ſo white as uſual.

It is with reaſon then that Boerhaave orders * a *Sal Alcali puriſſimum* to be uſed in the preparation of *Tartarus regeneratus*, or *Terra foliata Tartari*; and the diſpenſatories which order *Sal Tartari*, direct the chemiſts to a more certain proceſs than when they are left at liberty to em-

* Chem. Proc. 67.

ploy what they will. The chemiſts in town here moſtly uſe the *cineres clavellati* in this proceſs, and ſucceed very well, or make the ſalt with large foliations and white; and perhaps this is the only one of all the neutral ſaponaceous ſalts, which is more efficacious, the whiter and purer it is.

The principal reaſon why chemiſts ſucceed better in making *Terra foliata Tartari* with *cineres clavellati*, than with any other of the lixivial ſalts, ſeems to be, becauſe thoſe who prepare the *Pot-aſh* content themſelves with letting cold water run through large tubes or vats filled with aſhes, till it has waſhed ſo much from them as to make a *lixivium* ſupport an egg; by which operation, little of the Neutral Salts are diſſolved to mix with the *lixivium*; and probably in drying the *lixivium*, what of the Neutral Salt is in it, is forced by the fire to the ſurface, to form that cruſt which it takes in burning the ſtraw that is wetted with it.

That the aſhes which remain after the *pot-aſhes* or ſalts are extracted, contain much of the Neutral Salt, is evident from their ſerving ſo well the purpoſes of agriculture, being preferable to ſea-ſalt for all ſuch purpoſes.

How ſuch a quantity of ſea-ſalt ſhould be contained in vegetables, is an enquiry foreign to your deſign, and therefore I ſhall not mention my opinion of this phænomenon: I believe it will not, however, be unneceſſary to remark, that Phyſicians ought to conſider, that the pro-

portion of this Neutral Salt, mixed in alcaline ones, is often different; the more is thus mixed, the leſs acid is required to ſaturate a given quantity: hence it frequently happens, that the medicine we intend ſhould be perfectly neutral, is very acid, and entirely diſappoints our expectations *.

With reſpect to the proceſs for making the *regenerated Tartar*, it may not perhaps be without ſome uſe to obſerve, that the more vinegar is put to it, the *foliations* will appear larger and

* It is common here to preſcribe one ſcruple of Sal Abſinth. to half an ounce of Succ. Limon. To learn how far this proportion was juſt, I procured ſix parcels of Salt of Wormwood, and ſix of Salt of Tartar, from ſhops in different parts of the town: I procured likewiſe a quantity of lemon-juice, ſufficient for all the trials I intended. Half an ounce of this juice was ſaturated with 18 grains of one of theſe parcels, and required 32 of another to reduce it to the ſame degree of neutrality. This difference was owing to the Neutral Salt contained in the laſt, which was really procured from Wormwood aſhes, and carefully lixiviated with hot water.

The ſpecimens of Salt Tartar were more alike; they varied only from 18 or 19 grains to 23 or 24. The freſh Salt of Tartar is a pure alcaline ſalt; if it is expoſed to the air, it abſorbs the acid contained in it, and thus becomes neutral in proportion to the time it has been kept, or as it has been expoſed to the air.

Wherefore, in directing the common ſaline draughts, it would ſeem that 24 grains is a much more ſuitable proportion than one ſcruple; and if to this mixture we add a ſcruple of ſome abſorbent, as crab's eyes, &c. we ſhall probably have a mixture more perfectly neutral, than we ſhall be able in common to obtain by any other method of preſcribing.

whiter, though it is the more expenſive, becauſe, whatever vinegar is beſtowed on it, the operator muſt expect very little more ſalt than the weight of the alcali made uſe of.

The addition of ſomewhat more than the ordinary proportion of vinegar not only contributes to render the ſalt finer, as by repeated trials we found it did, but alſo prevents it from becoming too alcaline; for was it to be brought to an exact *punctum ſaturationis* before it is committed to the fire, the heat neceſſary to evaporate the liquor and flux the maſs would render it more of an alcaline corroſive, than of a neutral ſaponaceous nature. This induced me to remark, that its whiteneſs may be eſteemed as a mark of its goodneſs, it arguing that a proper quantity of vinegar has been uſed; and it may be rendered whiter and more pure by repeating the diſſolution, evaporation, and fluxion.

The *Tartarus regeneratus*, taken from the quantity of half a drachm to two drachms, is an excellent alterative and diuretic; and from three to ſix drachms is a very mild cathartic, that never ſinks the ſpirits, or raiſes any violent diſorder, and particularly is ſerviceable to ſeveral dropſical patients: of its ſervice this way allow me to mention one hiſtory.

A married gentlewoman, forty-eight years old, childleſs, a little corpulent, was repeatedly affected with an immoderate diſcharge of the *menſes*; ſoon after her belly began to ſwell, her legs grew œdematous, and all the ſymptoms of a

dropſy appeared. She was treated with the ſtrong and gentler cathartics, diuretics, aperients, and corroborants; but this bad circumſtance always attended evacuants either by ſtool or urine, that they never failed to produce a diſcharge of blood from the *vagina*, which ſunk her prodigiouſly. Corroborants, eſpecially of the aſtringent kind, ſoon ſtopt the flux; but, at the ſame time, contributed to increaſe the ſwelling, by leſſening the diſcharge by urine and ſtool. She then began to take three drachms of the *Terra foliata Tartari* once or twice a week; it gave her two or three ſtools, with a large evacuation of urine, without exciting the menſtrual diſcharge, or affecting her ſtrength: ſhe continued the uſe of it for upwards of a year, without increaſing the doſe, or attempting any other relief than what that gave her, which was very great. Whether it would have made a complete cure, I cannot ſay; for, having taken a rough purgative, ſhe had her days ſhortened by it.

THE following Eſſay on Amber was printed in the Philoſophical Tranſactions, when curioſity was much excited upon the origin of this valuable production: beſides the authorities quoted in this place, the reader may meet with many others in James's Medicinal Dictionary, under the word Ambra: *Philoſophical Tranſactions, N°* 19, *p.* 349; *N°* 248, *p.* 5; *N°* 468, *p.* 322: *Dictionnaire Raiſonnè-Univerſel de Matiere Medicale, tom.* vii. *p.* 209, *et ſuivant: Macquer Dictionnaire de Chimie, ſous le mot* Succin. *Edit.* 1778.

Though Amber was known to Antiquity, Frederic I. *King of Pruſſia, was the firſt who rendered it an important commercial object. Amber is very common in this kingdom, and in ſome places lies almoſt on a level with the ſurface of the ground, ſo that the labourers collect conſiderable quantities of it in tilling the land. There are ſome parts of Pruſſia, where neither tree nor herb vegetates, where the ground is covered with a ſubſtance reſembling the bark of a tree. Frederic cauſed this ſubſtance to be removed, under which was found a bed of black earth, and beneath this a bed of wood, in the veins of which Amber was diſcovered, greater in plenty in proportion to the quantity of this wood.*

Some years ago a conſiderable quantity of fine Amber was found in Saxony, which has furniſhed four diſſertations, printed in the Collection of the Curioſities of Nature; an extract of which may be ſeen in the French edition of Henkel's Pyrithologia.

It

It is said that the King of Prussia has a burning mirror of Amber, that is a foot broad, and free from blemish. There is in the cabinet of the Duke of Florence, a fine column of Amber, six feet high, and of the most perfect lustre: there are also vessels made of this substance with infinite labour. We are informed, that some years ago there was an artist in Prussia, called Samuel Som, who had not only the art of clarifying Amber, and rendering it transparent, but also of dying it of any colour, and even to soften it and include insects in it, to make a gain of selling it to persons curious in these rarities.

Editor.

EXTRACT

EXTRACT OF AN ESSAY UPON THE ORIGIN OF AMBER *,

Read before the ROYAL SOCIETY, March 1, 1743-4, p. 21.

AFTER all that has been wrote upon the ſubject of Amber, its origin is yet, in a great meaſure, unknown. Several ingenious men have ſearched into this affair upon the ſpot where the Amber is principally gathered: they have related their obſervations with great candour; they have given us the concluſions they drew from the facts they diſcovered; yet without ſatisfying us entirely about many particulars.

But as a knowledge of the nature of things can only be acquired from the things themſelves, I have carefully collected every material fact I could meet with from thoſe who were beſt acquainted with the natural hiſtory of this ſubject, and whoſe induſtry and accurateneſs in obſerving, and good faith in relating their obſervations,

* Philoſophical Tranſactions, N° 472.

have

have been generally eſteemed unexceptionable. Of theſe I ſhall only mention *Wigandus*, *Hartman*, and *Sendelius*, the laſt who has wrote, as far as I know, profeſſedly upon this ſubject.

The evidence which theſe gentlemen afford us I have endeavoured to throw together, in the moſt natural order I could, without reſpect to any hypotheſis: but as this enumeration of facts admits of no abridgement, my papers would take up too much room in your memoirs, therefore I can only refer to the eſſay itſelf. Upon this foundation of facts is built a diſcuſſion of the following problems:

1. Whether Amber is not ſtrictly a marine production; or is reduced by ſome quality of the ſea-water into the condition we find it in? Or,
2. Whether it is not to be conſidered only as a bituminous body, generated in the bowels of the earth? Or, laſtly,
3. Whether it is not, in its origin, a vegetable production, a reſin; but changed into its preſent form by a mineral acid?

It will only be neceſſary, in this place, to mention, that, after having ſhewn the difficulty of maintaining the two firſt, I have undertaken to ſupport the laſt of theſe opinions.

I endeavour to make it appear, that Amber was, in its origin, a vegetable reſin *; the pro-

* From the ſubſequent obſervations on mixing oils, reſinous and pinguous ſubſtances, it appears that the author retained the opinion he had thus early adopted. *Editor.*

duct,

duct, perhaps, of the fir or pine kind *; by conſidering the appearance of the ſubſtance itſelf: and that though it has ſome diſtinguiſhing properties, yet it has many others, which are common to an indurated reſin. Its aſpect, its texture, its form, are arguments for this. The bodies which it is known to incloſe are urged as proofs, that this incluſion could not happen in the ſea, nor in the earth, but upon its ſurface; as the included objects are moſtly animals, moſtly volatiles too: very few reptiles, except ſuch as are often found aloft in trees, as ants, ſpiders, &c. and ſcarcely ever any aquatics, are found in Amber. And, I believe, I may challenge all the cabinets of the curious to produce one inſtance of a marine body having been found naturally incloſed in Amber. That there are ſeveral fictitious ones is granted.

That this reſin, with the trees which afforded it, were buried in the earth by the deluge, or by ſome ſuch violent renverſement, and there conſtitute the proper veins of Amber, I likewiſe endeavour to make appear, from the ſame evidence of facts. The ſubſtance of which theſe veins conſiſt hath ſeveral genuine characteriſtics of wood ſtill remaining. The texture of this ſubſtance is often an undoubted proof of what it hath been; being fibrous, and, when dried, ſwims in water, and burns like other wood. The

* This was the ſuggeſtion of Agricola, and of ſome more recent writers. *Editor.*

Amber

Amber is not diſpoſed in theſe veins in one continued *ſtratum*; but lumps of it are irregularly diſſeminated through the whole of what I call the woody maſs.

A difficulty, which naturally offers itſelf in this place, is attempted to be removed: What proof have we that this, which is called wood, is not mere foſſil wood, the product of creating power, exerted in the place where it is now found? It is anſwered, that as there are undoubted proofs, that many ſubſtances now occur, where they were not originally framed, we are under no greater difficulty in accounting for the change of place in one than the other. It is known that the *exuviæ* of fiſhes are ſometimes found on the tops of the higheſt mountains. The bones of large animals are met with at prodigious depths, where nature never formed, nor art conveyed them. Whole woods are found under-ground. The cauſe that effected theſe was capable of the other.

Yet, allowing theſe allegations to be juſt, by what cauſes is this change produced? It is urged, that time is one of the cauſes; and that the reſt is completed by the acid of the earth, a vitriolic mineral acid. It is proved, from the facts above-mentioned, that ſuch an acid is preſent wherever Amber occurs in its *proper matrix*; that it is ſometimes found in the Amber itſelf, in its genuine appearance; that the acid of the ſalt of Amber appears, from experiments, to be vitriolic; that common turpentine (a known vegetable

vegetable reſin) affords, by proper management with a vitriolic acid, a conſiderable portion of the ſame chemical principles that Amber does; that thoſe pieces of Amber, which have been found ſoft and imperfect, are nearly related to a vegetable reſin: in ſhort, it is endeavoured to be proved, that we have the ingredients of Amber in our power, and that nothing is wanting but a ſucceſsful application of them to each other, at leaſt to procure the medicinal preparations of Amber at an eaſy expence. Time and repeated trials may, perhaps, ripen this beginning, in ſomebody's hands, into an happy uſeful imitation of this valuable ſubſtance.

This account is concluded with an enquiry into the medical virtues of Amber, and ſome of its principal preparations. It is obſerved, that a ſubſtance of ſo firm a texture, as ſcarce to yield to any common *menſtruum*, is not likely to produce any conſiderable effects upon the human body; and that, indeed, there are very few genuine inſtances recorded of any: that buſy imagination might, probably, at firſt, introduce it, prejudice ſupport it, and engage men of parts and authority to recommend it to their inattentive ſucceſſors.

I ſhall finiſh this abſtract with remarking, that were ſome of the leiſure moments of men of great abilities and experience devoted to inform the world of the inefficacy of ſuch methods and medicines as they have proved to be ſo,

Phyſic

Phyſic would be reduced into narrower bounds; they would merit the thanks of every one in the profeſſion; and poſterity, at leaſt, would commend their endeavours.

OBSERVATIONS

OBSERVATIONS ON THE MANNA PERSICUM*,

Read before the ROYAL SOCIETY, April 26, 1744.

IT does not appear very plain, from any thing that has occurred to me in the writings of the elder Greek phyſicians, that they were much, if at all, acquainted with any ſubſtance that now goes under the name of *Manna*. They had the term, but applied it to a ſubject very different from what we do at preſent. The Ὑποσεισμὰ τῆς Λιβανωτῖδος, or the *Micæ thuris concuſſu eliſæ*, the bits broke off from the *olibanum* in carriage, was the ſubſtance they knew by that name.

If the *Arabians* did not firſt of all introduce ſome kind of purging *Manna* into practice, they at leaſt rendered the uſe of this drug more common and extenſive. Their country afforded ſeveral ſpecies of it; which being familiarly

* Philoſophical Tranſactions, N° 472, p. 86.

known, is, perhaps, the reaſon why no deſcriptions have been left ſufficiently clear, whereby to diſtinguiſh them from each other. Whoever has conſulted the Arabian writers, or the beſt of their commentators, will allow that their accounts are defective.

That they had three ſorts of this drug, diſtinguiſhed by the names of *Manna*, *Tereniabin*, and *Siracoſt*, is certain; but whether theſe are now known, or by what appellations, has been very much diſputed.

Rauwolf, in his Itinerary publiſhed by Ray, and Tournefort, in his voyage to the Levant, have given the cleareſt intimations of any writers that I know of: if to theſe we add Cluſius, we have all that we are to expect of certainty, amongſt thoſe who have mentioned it; they being eye-witneſſes of what they wrote. Yet the deſcriptions of theſe are either ſo imperfect or unknown, that a very late writer upon the *Materia Medica**, either not having ſeen or underſtood them, has fallen into a miſtake about the *Manna Arabum*, and his authority may perhaps miſlead others.

My worthy friend Peter Collinſon, having procured a ſort of *Manna* from a gentleman at Peterſburgh, under the title of *Manna Perſicum ex planta* Al-Hagi *Maurorum*, was pleaſed to favour me with a ſpecimen of it. I conſulted the principal writers on the *Materia Medica*; and

* Geoffroy Tractat. de Mat. Med. vol. ii. p. 586, &c.

finding

finding their opinions to be frequently oppoſite, and their accounts in general perplexed, I imagined it would not be unacceptable to the curious to have ſuch a deſcription of this ſpecies as would probably make it clear, that we have one kind of the *Manna Arabum* ſtill extant, viz. the *Tereniabin*, and prevent any future miſtakes about it.

The ſpecimen of *Manna* that now lies before me appears, at firſt ſight, to be a dirty reddiſh brown-coloured mixed maſs; which, upon a nearer view, is found to conſiſt of,

1. A great number of globular, cryſtalline, almoſt pellucid bodies, of a yellowiſh white colour, and different ſizes; the biggeſt not much exceeding a large coriander-ſeed, or a very ſmall pea. They differ from grains of Maſtich, in being more upon the reddiſh caſt; but in figure and tranſparency vary not much.
2. Some ſmall ſticks like prickles, and others like footſtalks of leaves or fruit.
3. A few narrow-pointed firm ſmall leaves.
4. A large quantity of long reddiſh-coloured pods, of a ſweetiſh gelatinous taſte, containing from one to ſix or ſeven hard, irregular, ſomewhat kidney-like ſeeds, which to the taſte are very acerb. And,
5. Some ſand and earth. Four ounces of the *Manna*, diſſolved in warm water, left one ounce or ſomething more of theſe in the filtre.

The globules (N° 1.) are hard, and break between the teeth like ſugar-candy; they are of a pleaſant ſweet taſte, with much leſs of the *Manna* reliſh than the Calabrian; but with enough to diſcover to what family this ſubſtance belongs.

The ſticks, leaves, pods, &c. ſeem to be parts of the plant that produces the *Manna*. Some of the ſeeds have been ſown, and proved ſo freſh as to afford ſome plants of the *Alhagi*.

About the year 1537, when Rauwolf wrote his Itinerary, it appears, that large quantities of this kind of *Manna* were brought from Perſia to Aleppo, where it was then known under the name of *Trunſchibil* or *Trunſchibin*; a corruption, doubtleſs, of the antient *Terenjabin*; or, as it ought to be wrote, according to Deuſingius*, *Terengjabim*.

Rauwolf informs us, that this ſpecies of *Manna* was gathered from the *Alhagi*; a plant which is minutely deſcribed by Tournefort†, who alſo confirms the account which Rauwolf had long before given, with the following particulars:

"It is chiefly (ſays he) about Tauris, a city "in Perſia, that it is gathered, under the name "of *Trungibin* or *Terenjabin*, mentioned by Avi- "cenna and Serapion. Thoſe authors thought "it fell upon certain prickly ſhrubs; whereas it "is only the nutritious juice of the plant."---He adds, "that, during the great heats, you perceive

* Deuſingius Tract. de Manna et Sacch. p. 11.

† Tournefort's Voyage to the Levant, vol. i. p. 247, 248.

"ſmall

" ſmall drops of honey upon the leaves and
" branches of theſe ſhrubs; theſe drops harden,
" in grains about the bigneſs of coriander-ſeeds:
" they gather thoſe of the *Alhagi*, and make
" them into reddiſh cakes full of duſt and leaves,
" which alter the colour, and leſſen its virtue.
" This *Manna* is much inferior to the Italian.
" The ordinary doſe is from 25 to 30 drams."

Cluſius * informs us, that the *Tereniabin* of the modern Arabs is gathered from a prickly ſhrub, ſuch as the *Alhagi* is deſcribed to be. Avicenna †, according to his preſent tranſlation, tells us, that the *Tereniabin* falls *ſuper lapides*; but Deuſingius ‡ ſays, that it ought to be read *ſuper Alhagi*; and that his tranſlators were led into this miſtake from the reſemblance betwixt *Al-Hhagier* (the word in the Arabic text, and which ſignifies a kind of thorny plant, ſuch as the *Alhagi* is ſaid to be) to *Al-Hagio*.

It is therefore evident, that the *Manna Perſicum*, now before us, is the *Tereniabin*, *Terenjabin*, *Terræjenbin*, or more properly the *Terengjabin*, of the old Arabians, and of Cluſius; the *Trungibin*, or *Trunſchibil*, of the latter, of Rauwolf and Tournefort; very probably, the *Manna Maſtichina orientalis* of Matthiolus and Bauhine; as it is the *Maſtichina* and *Alhagina* of Geoffroy; though this author makes the *Tereniabin* a ſpecies

* Cluſ. Exotic. vol. ii. p. 164.
† Avicen. Oper. tom. i. p. 404.
‡ Tract. de Manna, p. 19.

of *Liquid Manna**, in complaisance to his countryman Bellonius; who, though in general a diligent observer, yet, in this case, was misled by the Caloyers, or Monks of Mount Sinai.

Bellonius says, in his Observations †, and more largely in his Treatise *de Arboribus perpetua fronde virentibus*, that these Caloyers collect a kind of liquid *Manna*, which they call *Tereniabin*; that this species was known in the shops at Cairo by the same name; and that this is the *Mel roscidum* of Galen, and the *Mel cedrinum* of Hippocrates.

I think it is very plain, that Bellonius was mistaken in the first part of his assertion, from what has already been advanced. The Caloyers told him, that they called it *Tereniabin*; and he takes it for granted, that it was the *Tereniabin* of the old Arabians, contrary to their own accounts supported by the testimony of their successors, who are known to vary as little as any people whatever from the traditions and customs of their predecessors, and still retain a great many of their appellations. For proof of this, I need only refer to the accounts which Rauwolf, Tournefort, and Dr. Shaw, give us of those people.

That this liquid *Manna* was the Δροσόμελι *seu* Αερόμελι of Galen ‡, and the Μέλι κέδρινον of Hippocrates ‖, (supposing there is no mistake in the

* Tract. de Mat. Med. tom. ii. p. 587.

† Bellonii Observ. apud Clus. p. 129.

‡ Galen de Alem. Facult. l. iii. c. 39.

‖ Hippocrat. de Ulceribus, p. 876. Edit. Foesii.

text), ſeems very probable. The deſcription which Galen has left of the *Mel roſcidum*, and the manner of collecting it on Mount Sinai in his time, tallies exactly with Bellonius's account; and thus far, I believe, all authors agree: but that the virtues of *Manna* were known ſo early as in the times of theſe two authors, will be difficult to prove.

Galen takes notice of this *Mel roſcidum* more as a curioſity than a medicine. He no where, that I know of, mentions its uſe, or deſcribes its qualities. He introduces the account of it with a *Memini aliquando*, and ſays, that the *Mel roſcidum* was rarely met with in his country, but was gathered at Mount Sinai every year: and, indeed, from the manner in which it is ſpoken of by an old Greek writer in Athæneus, as cited by Salmaſius, it would ſeem that it was only uſed for pleaſure, as an agreeable ſweet, *Melle ipſo ſuavius*; and probably continued to be of no other uſe. Meſue tells us*, that Galen mixed *Manna* with *Scammony*. In the ſpurious piece *de Dynamiis*, aſcribed to Galen, *Scammony* is ordered to be mixed with honey; but he never once mentions *Manna* in any of his extant writings. As Galen is known to be very minute in his account of the *Materia Medica* of that time, his ſilence is a ſtrong argument againſt the ſuppoſition, that even the *Mel roſcidum* was in phar-

* Meſue de Simpl. c. 8.

maceutic uſe, much leſs any other ſpecies of *Manna*.

If Galen was unacquainted with this ſubſtance, it is very probable that Hippocrates was ſo likewiſe; ſince a drug that muſt have made a conſiderable figure in his *Materia Medica*, would not have ſoon been ſtruck off the liſt, or dropped into oblivion and diſuſe.

But how ſhall we get rid of the Μέλι κέδρινον; the name ſufficiently intimating what ſubſtance was intended? Perhaps Foeſius's ſuggeſtion may help us. He thinks, that the words might have been read with a comma intervening, whereby we ſhould have had two diſtinct well-known ſubſtances, honey, and the reſin of the cedar; two ſimples that were then, and continued long after, in familiar uſe; inſtead of one, which he mentions no where elſe, and ſeems to be unknown ſome ages after.

Upon the whole, I have not hitherto met with evidence ſufficient to induce me to believe, that either the *Mel roſcidum*, or any kind of *Manna*, was in common medical uſe either with Hippocrates or Galen. Actuarius mentions it once*, and, as I know of, only once: he makes it a purgative, and to be ſomewhat ſtronger than *Caſſia*.

It is now pretty generally known, that the *Mannas* in uſe are not a *Mel aerium*, or honey-

* Actuar. Method. Medend. l. v. c. 8.

dew,

dew, as was long believed, but a *Succus proprius* iſſuing out of ſome particular trees, at proper ſeaſons, and in ſome climates only; and that, during the ſummer's heats, a great number of vegetables, in almoſt all the temperate countries, afford a juice ſomewhat a-kin to Manna, from whence the bee collects and prepares her honey. It may not, however, be amiſs, nor very foreign to our ſubject, to exhibit a ſhort account how the *Manna Officinarum* is collected.

In Calabria and Sicily, in the hotteſt part of the ſummer-months, the *Manna* oozes out of the leaves, and from the bark of the trunk, and larger branches, of the *Fraxinus*, or Calabrian aſh. The *Ornus* likewiſe affords it, but from the trunk and larger branches only, and that chiefly from artificial apertures; whereas it flows from the *Fraxinus* through every little cranny, and burſts through the large pores ſpontaneouſly.

What is got from different parts of the tree acquires different names; the trunks generally afford thoſe large white pieces to which we give the name of flaky; but the fineſt of all is ſuch as is collected from artificial inciſions, in which little ſtraws, &c. are purpoſely placed in ſuch a manner, as that the flowing juice may concrete upon them, and form thoſe long, white, cylindrical, perforated pieces, which are ſo much valued.

This juice is ſecreted in the largeſt quantity betwixt noon and evening. In the night it is condenſed, if the ſeaſon is dry, otherwiſe the

Manna

Manna is ſpoiled: they ſcrape off the ſmall with wooden knives, early in the morning, and gather the larger flakes; both which are afterwards dried upon clean paper in the ſun, till they ſtick no longer to the fingers; and the different ſorts are then carefully packed up for uſe and exportation.

SINCE

SINCE the publication of the ſucceeding paper, ſome Gentlemen have with great humanity united together to promote the recovery of perſons apparently dead, eſpecially from drowning, well known by the name of the HUMANE SOCIETY; *for the eſtabliſhment of which, the public is particularly indebted to the activity and benevolence of Dr.* HAWES.

This Society has publiſhed the proper methods of treating perſons in theſe unhappy circumſtances, and gives a reward of two guineas to the perſons employed, if the caſe be unſucceſsful, provided the perſon has not been more than two hours *under water, and the methods laid down by the Society have been perſevered in for the* ſpace of two hours. *If the perſon recovers, the reward is four guineas.---The Society is ſupported by public ſubſcription.*

As the ſubject is intereſting to the community and public at large, I have thought it not improper, briefly to ſubjoin the methods of treatment, found by the Society to be moſt ſucceſsful on theſe occaſions.

I. *The body ſhould not be rolled on the ground, or over a barrel, nor lifted up by the heels, or be any other way roughly handled or violently ſhook; but be removed to a convenient place, lying as on a bed, with the head a little raiſed, in as natural a poſition as poſſible.*

II. *The body, well wiped with a cloth, ſhould be placed in a warm bed or blanket; but not too near a large*

a large fire. Bottles of hot water ſhould be laid to the bottoms of the feet, joints of the knees, and under the arm-pits. A warming-pan moderately heated, or hot bricks wrapped in cloths, ſhould be rubbed over the body, particularly along the back. The natural warmth of a healthy perſon, eſpecially a child, lying cloſe to the body, has been found very efficacious. The room ſhould be kept open and airy, with few perſons in it. The ſhirt of an attendant, or ſkin of a ſheep freſh killed and warm, may be uſed to advantage. Should the accident happen in the neighbourhood of a warm bath, brew-houſe, bake-houſe, glaſs-houſe, ſaltern, ſoap-manufactory, or any fabric where warm lees, aſhes, embers, grains, ſand, water, &c. can be eaſily procured, it will be very proper to place the body in any of theſe, moderated to a degree of heat, very little exceeding that of a healthy perſon.

III. *The body being placed in one or other of the above advantageous ſituations, various ſtimulating means ſhould be immediately employed. The moſt efficacious are:---Blowing with force into the lungs, by applying the mouth to that of the patient, cloſing at the ſame time his noſtrils:---Throwing the ſmoke of tobacco up the fundament into the bowels, by means of a clyſter-pipe or fumigator; a pair of bellows may be employed till the others can be procured:---Rubbing the belly, cheſt, back, and arms, with a coarſe cloth, or dry ſalt, ſo as not to rub off the ſkin; or with a flannel dipped in brandy, rum, or gin:---Applying ſpirits of hartſhorn, volatile ſalts, or the like, to the noſtrils, and rubbing them on*

the

the temples frequently:---Tickling the throat with a feather, to excite a propenſity to vomit; and the noſtrils alſo with a feather or ſnuff, to provoke ſneezing. The body ſhould at intervals be ſhaken, and varied in its poſition.

IV. *If there be any ſigns of returning life, ſuch as ſighing, gaſping, twitching, beating of the heart, return of natural warmth or colour, a ſpoonful of water may be adminiſtered, to try if the power of ſwallowing be returned; if it be, a ſpoonful or two of warm wine, or brandy and water, may be given to advantage, but not before.*

Early *bleeding has been found pernicious, and even fatal; it is not* always *applicable, though it may ſometimes be employed by a perſon of ſkill, to remove or prevent ſymptoms of inflammation.*

The above methods of reſtoring life are applicable to various other caſes of apparent ſudden death; whether from hanging, apoplectic and convulſive fits, cold, ſuffocation by damps or noxious vapours, proceeding from coal mines, confined air of wells, ciſterns, caves, or from the muſt of fermenting liquors.

The Rules and Reports of this Humane Inſtitution are printed, where they may be ſeen more at large.

Editor.

OBSERVATIONS

OBSERVATIONS

ON A

CASE publiſhed in the laſt Volume of the *Medical Eſſays*, &c. " of *recovering* a Man " *dead* in Appearance, by diſtending the " *Lungs* with Air. Printed at *Edinburgh*, " 1744 *."

Read before the ROYAL SOCIETY, February 21, 1745.

THERE are ſome facts, which in themſelves are of ſo great importance to mankind, or which may lead to ſuch uſeful diſcoveries, that it would ſeem to be the duty of every one, under whoſe notice they fall, to render them as extenſively public as it is poſſible.

The caſe which gives riſe to the following remarks, I apprehend, is of this nature. It is an account of " a man, dead in appearance, reco- " vered by diſtending the lungs with air; by " Mr. William Toſſack, Surgeon in Alloa;"

* Philoſophical Tranſactions, N° 475. p. 275.

printed

printed in part ii. p. 605. vol. v. of the Medical Eſſays, publiſhed by a ſociety of gentlemen at Edinburgh; an abſtract of which will be ſufficient in this place: thoſe who deſire an ampler account may conſult the article itſelf.

A perſon ſuffocated by the nauſeous ſteam ariſing from coals ſet on fire in a pit, fell down as dead: he lay in the pit, "between half an "hour and three quarters, and was then dragged "up; his eyes ſtaring and open, his mouth "gaping wide, his ſkin cold; not the leaſt pulſe "in either heart or arteries, and not the leaſt "breathing to be obſerved."

In theſe circumſtances, the ſurgeon, who relates the affair, "applied his mouth cloſe to the "patient's, and, by blowing ſtrongly, holding "the noſtrils at the ſame time, raiſed his cheſt "fully by his breath. The ſurgeon imme-"diately felt ſix or ſeven very quick beats of "the heart; the thorax continued to play, and "the pulſe was ſoon after felt in the arteries. "He then opened a vein in his arm; which, "after giving a ſmall jet, ſent out the blood in "drops only for a quarter of an hour, and then "he bled freely. In the mean time, he cauſed "him to be pulled, puſhed, and rubbed, as "much as he could. In one hour the patient be-"gan to come to himſelf; within four hours he "walked home; and in as many days returned "to his work."

There were many hundred people, ſome of them of diſtinction, preſent at the time.

This

This is the ſubſtance of the account; from whence it naturally appears, how much ought to be attributed to the ſagacity of the ſurgeon in the recovery of this perſon. Anatomiſts, it is true, have long known, that an artificial inflation of the lungs of a dead or dying animal will put the heart in motion, and continue it ſo for ſome time; yet this is the firſt inſtance I remember to have met with, wherein the experiment was applied to the happy purpoſe of reſcuing life from ſuch imminent danger.

Bleeding has hitherto been almoſt the only refuge upon theſe occaſions: if this did not ſucceed, the patient was given up. By bleeding, it was propoſed to give vent to the ſtagnating blood in the veins, in order to make way for that in the arteries *à tergo*, that the reſiſtance of the heart being thus diminiſhed, this muſcle might again be put in motion.

But, in too many inſtances, we every day are informed, that this operation will not ſucceed, though the aperture is made with never ſo much ſkill; nor is it likely that it ſhould: when the blood has loſt conſiderably of its fluidity, the motion of the heart, and the contractile force of the ſolids, are at an end.

Chafing, rubbing, pulling, the application of ſtimulants, are too often as ineffectual as bleeding.

The method of diſtending the lungs of perſons, dead in appearance, having been tried

with ſuch ſucceſs in one inſtance, gives juſt reaſon to expect, that it may be uſeful to others.

It may be a proper enquiry, In what caſes, and under what circumſtances, there may be a proſpect of applying it with ſucceſs?

It will at once be granted, that when the juices are corrupted, where they are rendered unfit for circulation by diſeaſes, where they are exhauſted, or where the tone and texture of the ſolids is injured or deſtroyed, it would be extreme folly to think of any expedient to recover life.

But where the ſolids are whole, and their tone unimpaired by diſeaſes, the juices not vitiated by any other cauſe than a ſhort ſtagnation; where there is the leaſt remains of animal heat, it would ſeem wrong not to attempt ſo eaſy an experiment.

This deſcription takes in a few diſeaſes, but a greater number of accidents. Amongſt the firſt, are many of thoſe which are called ſudden deaths from ſome inviſible cauſe; apoplexies, fits of various kinds, as hyſterics, ſyncopes, and many other diſorders, wherein, without any obvious pre-indiſpoſition, perſons in a moment ſink down and expire. In many of theſe caſes it might be of uſe to apply this method; yet without neglecting any of thoſe other helps, which are uſually called in upon theſe melancholy occaſions.

It

It is not eaſy to enumerate all the various caſualties, in which this method might be tried not without a proſpect of ſucceſs; ſome of them are the following:---Suffocations from the ſulphureous damps of mines, coal-pits, &c.; the condenſed air of long unopened wells, or other ſubterraneous caverns; the noxious vapours ariſing from fermenting liquors received from a narrow vent; the ſteam of burning charcoal; ſulphureous mineral acids; arſenical effluvia, &c.

Perhaps thoſe, who, to appearance, are ſtruck dead by lightning*, or any violent agitation of the

* The following extraordinary inſtance of recovery, I have inſerted from the Reports of the Humane Society for the year 1778, p. 83: it is one of thoſe caſes of recovery that cannot be made too extenſively public. *Editor.*

" On Sunday night, July 5, 1778, at about half paſt " ten, I was called to the aſſiſtance of Peter Lucas, aged " eighteen, apprentice to Mr. Hicks in White Lyon-ſtreet, " Norton Falgate, who was brought home upon boards, " *to all appearance dead*, from a ſtroke of lightning. Upon " entering the room, and examining the body, I found " him both ſtiff and cold, not perceiving the leaſt warmth " in any part of the body or extremities: his fingers and " toes were contracted, his eyes ſunk, and his countenance " livid. I immediately with aſſiſtance ſtripped off his wet " cloaths, and with all poſſible expedition placed him be- " tween blankets made very hot. The aſſiſtants then uſed " ſtrong friction over the whole body. During this, I " made a very large orifice in the bazilic vein, and pro- " cured by ſlow degrees near twelve ounces of blood. Vo- " latile and cardiac medicines were forced into the mouth,

the paſſions, as joy, fear, ſurprize, &c. might frequently be recovered by this ſimple proceſs of

" but for a conſiderable time to no effect, he being totally
" incapable of ſwallowing. Large bliſtering plaiſters were
" applied to the whole ſpine of the back, and to both the
" feet. In half an hour I procured about eight ounces
" more blood, and by the repeated uſe of volatiles, together
" with the ſtrongeſt frictions the whole time, at about half
" paſt eleven I perceived a very ſlight convulſive motion of
" the diaphragm, or hiccough; which was ſucceeded ſome
" little time after by a ſlight warmth and irregular pulſa-
" tion of the heart; and ſoon after by a very ſlow inter-
" rupted reſpiration. Before twelve I perceived he began
" to ſwallow, and by ſteadily uſing the friction and vola-
" tiles for *an hour* longer, a regular pulſation enſued; the
" lungs performed their office; and a gradual heat, and re-
" covery of every faculty ſucceeded. About *one* he ſpoke,
" though not articulately. In the morning he was in a
" conſiderable fever, in great meaſure accounted for by the
" ſtimulus of the bliſters, and the medicines applied the
" preceding night: but by the uſe of antiphlogiſtic regi-
" men, together with occaſional laxatives, he was reſtored
" to the enjoyment of perfect health in the courſe of a
" week. Upon the ſtricteſt examination of the body when
" firſt brought home, no external injury appeared, except a
" bruiſe along the right arm, which I preſume he received
" either from the firſt fall, or at the time of being placed on
" the board for conveyance, either, I think, ſufficiently ac-
" counting for ſuch appearance. Upon being queſtioned
" as to what had happened, he knew nothing but from
" the teſtimony of his companion, who was not in the leaſt
" affected. It appears that they had been at Iſlington, and
" were on their return caught in this ſtorm near the turn-
" pike at the London Apprentice, Hoxton; at which time

" the

of ſtrongly blowing into the lungs, and by that means once more communicating motion to the vital organs.

Malefactors executed at the gallows would afford opportunities of diſcovering how far this method might be ſucceſsful in relieving ſuch as may have unhappily become their own executioners, by hanging themſelves. It might at leaſt be tried, if, after the criminals have hung the uſual time, inflating the lungs in the manner propoſed, would not ſometimes bring them to life. The only ill conſequence that could accrue from a diſcovery of this kind would be eaſily obviated, by prolonging the preſent allotted time of ſuſpenſion *.

But this method would ſeem to promiſe very much in aſſiſting thoſe who have been ſuffocated in the water, under the above-mentioned circumſtances; at leaſt, it appears neceſſary to re-

" the above Peter Lucas was ſtruck down at the other's " feet. It further appears from the beſt calculation, that " before he (James Jaques) could procure aſſiſtance, to " have him conveyed home, and make application to me, " an hour at leaſt muſt have elapſed, during all which " time he was in very heavy rain.

" I am, &c.

" *White Lyon-ſtreet,* " J. MILWARD."
" *Norton Falgate.*

Reports of the Humane Society for the Year 1773.

* The Reports of the Humane Society furniſh us with many inſtances of recovery of hanged perſons, who had been apparently dead for a conſiderable time. *Editor.*

commend a trial of it, after the body has been diſcharged of the water admitted into it, by placing it in a proper poſition, the head downwards, prone, and, if it can be, acroſs a barrel, hogſhead, or ſome ſuch-like convex ſupport, with the utmoſt expedition.

It does not ſeem abſurd, to compare the animal machine to a clock; let the wheels whereof be in never ſo good order, the mechaniſm complete in every part, and wound up to the full pitch, yet, without ſome impulſe communicated to the pendulum, the whole continues motionleſs.

Thus, in the accidents deſcribed, the ſolids are ſuppoſed to be whole and elaſtic, the juices in ſufficient quantities, their qualities no otherwiſe vitiated than by a ſhort ſtagnation, from the quieſcence of that moving ſomething which enables matter in animated bodies to overcome the reſiſtance of the medium it acts in.

Inflating the lungs, and by this means communicating motion to the heart, like giving the firſt vibration to a pendulum, may poſſibly, in many caſes, enable this ſomething to reſume the government of the fabric, and actuate its organs afreſh, till another unavoidable neceſſity puts a ſtop to it entirely.

It has been ſuggeſted to me, by ſome of my acquaintance, that a pair of bellows might poſſibly be applied with more advantage in theſe caſes, than the blaſt of a man's mouth; but if any perſon can be got to try the charitable expe-

riment

riment by blowing, it would ſeem preferable to the other, for the following reaſons: 1ſt. As the bellows may not be at hand. 2dly. As the lungs of one man may bear, without injury, as great a force as thoſe of another man can exert; which by the bellows cannot always be determined. 3dly. As the warmth and moiſture of the breath would be more likely to promote the circulation, than the chilling air forced out of a pair of bellows.

To conclude, as I apprehend the method above deſcribed may conduce to the ſaving a great many lives, as it is practicable by every one who happens to be preſent at the accident, without loſs of time, without expence, with little trouble, and leſs ſkill; and as it is, perhaps, the only expedient of which it can be juſtly ſaid, that it may poſſibly do great good, but cannot do harm; I thought it of ſo much conſequence to the public, as to deſerve to be recommended in this manner to your notice. For though it is already publiſhed in a work which is generally read by the faculty; yet, perhaps, it may be overlooked by ſome, forgot by others, and perhaps, after all the care that can be taken, it may never come to the knowledge of a tenth of thoſe who ought not to be ignorant of it.

P.S. As the repreſentation of an extraordinary fact may perhaps induce ſome to try the experiment, when occaſions like thoſe which are ſpecified in the above remarks occur, it is hoped, that humanity will prompt all ſuch to

favour the public with an account of their ſucceſs, with the principal circumſtances that attended. And as the writer of theſe remarks has embarked in the deſign of rendering this fact diffuſively known, he would be glad to have it in his power to inform the public, that numerous experiments confirm what this caſe ſuggeſts, viz. the poſſibility of ſaving a great many lives, without riſking any thing.

White-hart Court,
Gracechurch-Street,
September 1744.

De

De Diaphragmate fiſſo, et mutatis quorundam Viſcerum Sedibus, in Cadavere Puellæ decem Menſium obſervatis; Epiſtola *

RICHARDO MEAD
JOANNES FOTHERGILL, S.

QUUM non ita pridem de caſu quodam, ut mihi videbatur, omnino ſingulari, coram te verba facerem, ipſe auctor eras, vir clariſſime, ut integram rei hiſtoriam literis conſignarem. Conſilio igitur tuo morigerus opus aggreſſus ſum; eoque lubentius, prout mihi perſuaſum eſt, id minus ingratum multis fore, ſi in publicum prodiret, quod tibi privatim non diſplicuiſſet. Tantum ſiquidem et merito ab omnibus tribuitur illius auctoritati, cui nihil antiquius, optatius nihil, quam bonis quibuſcunque artibus, de civibus ſuis, de humano genere, optime mereri.

Quo autem clarius tota res pateſcat, ab ovo,

* Philoſophical Tranſactions, N° 478, p. 11. Read before the Royal Society, June 16, 1745.

uti

uti dicitur, exordiri animus eſt, eorum omnium hiſtoriam exponens, quorum teſtis eram, fide, ſimplicitate, quâ poſſim, maximâ.

Fœmina generoſa 21 circiter annorum, tam ingenio acri et vivido quam forma ſpectabilis, habitus proceri et gracilis, temperiei ad ſanguineam vergentis, firma ſatis, ut plurimum, ſanitate felix, quinto poſt conceptionem circiter menſe, primò prægnans abortum fecit.

Magno ſuo malo id ei contigit, dum in cognati villâ longe a ſuis diſſitâ hoſpitio excipitur. Proxima, re jubente, obſtetrix advocatur, quæ artis cum primis ignara, et duris tantummodo ruricolarum ilibus aſſueta, uterum tenellulæ eouſque duriter tractavit, ut ex vaſis laceratis immane adeo ſanguinis profluvium exciverit, quantum ars ſiſtere non valuit, uſque demum donec graviſſima ſuperveniens *Leipopſychia* tam fluidorum motum, quam ſolidorum vim, impræſentiarum ſuſtulit.

Tandem vero revixit, atque ita convaluit, ut *ore ac membris in pallorem albentibus, oſtentui eſſet multum vitalis ſpiritus egeſtum.*

Ex tantis autem malis vix, et ne vix quidem eluctata eſt, antequam de novo fit gravida. Miſeram vero ſortem, quâ per totum graviditatis decurſum affligatur, referre piget; graviſſima namque mala, quæ uterum gerentes exercere ſolent, hæc noſtram et peſſime exercuerunt.

Puellulam tamen et ſuo tempore enixa eſt, cujus ad hiſtoriam, rebus maternis feliciter compoſitis, quoad morbos, mortem, et cadave-

ris

ris ſectionem, pertinuerit, referendam me accingo.

Recens natæ forma culpa omni carere videbatur: parvula erat et puſilla, cujuſque cutis juſto flaccidior, et aliquatenus rugoſior, ſe ſuo nutrimento parcius potitam teſtabantur; quod nemini matris hiſtoriam penſitanti mirum videbitur.

Reſpiratio a principio ei erat juſto paullulum frequentior, pauciſque poſt diebus accedit, tanquam a correpto frigore, gravedo, cum ingenti laticis mucoſi ex ore, et oculis, et naribus profluvio, quod quoties ubera nutricis ducere coacta eſt, fere ſpiritum infanti præcluſit. Et hinc ſæpius lachrymæ, hinc etiam iræ, graviores quidem quam adeo teneræ ætati contingere ſolent quæque ſæpius præſentibus metum injecerunt, ne, cum furore brevi, ſimul et extremum halitum efflaret.

Commodis vero medicamentis, alvum præcipue leniter ducentibus, a gravedine utcunque liberari videbatur: viribus etiam cum mole pedetentim auctis, in ſpem adducti ſunt parentes olim delicatulæ ſanitatem magis conſtantem fore.

Sæpius tamen quam in pleriſque aliis infantibus ſolet, ex improviſo vomitio eam corripit: ejecta nec cibum crudum referunt, nec coctum, ſed pultem quaſi purulentam, interdum acidum, ſæpe fetidum redolentem: dejectiones etiam juſto frequentiores et ejuſdem omnino indolis erant. Reſpiratio interim frequens, laborioſa, noctuque

noctuque difficillima. Hæc eo magis integræ ſalutis ſpem minuebant, quo minus auſcultabant remediis, quæ in hujuſmodi malis plerumque opem ferre ſolent.

Septimo tandem circiter menſe, exanthemata quædam ſive tubercula per faciem imprimis, deinde per collum, humeros, thoracem, et ad extremos manuum digitos, diſſeminata ſunt. Erant rotunda, pulicum inſtar morſûs lata, rubentia, duriuſcula, pruritu moleſtiſſima, ſenſim in veſiculas parvas, ſero tenui pellucido tandem repletas, elevata: quæ in ſquamas furfureas tandem exſiccata, decidebant, relictis veſtigiis livido-rubellis diu permanentibus.

Hæc in conſpectum venerunt paucorum poſt dierum febriculam; quum vero neque ortu, neque deceſſu juſtum aliquem typum ſervaverunt, pruriebant demum infenſiſſime, et nova ſemper ſeges demeſſam ſubſecuta eſt, diuturnum fore malum exiſtimabam, altiuſque radices egiſſe, quam quæ febre inordinata eruendæ forent: quumque exanthematum prorumpentium vis atque pruritus indies augeretur, ab impuro aliquo hoſpite, vitium humoribus inferente, morbum incrementa capere putabam. Ad purgantia itaque mitiſſima, acidum aut acre obtundentia, eaque quæ ad viſcidum ſolvendum apta viderentur, confugi; et ne forte victûs ratio, quanquam nutrici optime, minus tamen molli alumnulæ competeret, utraſque non niſi juſculis, carnibus tenerrimis, et id genus coctu facillimis alendas juſſi. Hinc tuberculorum numerus, pruritus,

pruritus, cæteraque mala brevi diminuta fuerunt; atque dubia hucuſque ſalus quodammodo ſtabilita.

Decimi vitæ menſis initium attigerat, quum parentum juſſu nutrix parvulam ablactare ſategit. Hoc ſine magna moleſtia tulit: die ſexto, propter alvum paulo aſtrictiorem aſſuetum ſibi ſolutivum hauſit, unde bis dejecit, et bene ſe habuit.

Sub veſperam enormi vomitione corripitur, ex nulla quantum patuit cauſa oriunda, quæ ſine ulla fere intermiſſione miſellam laceſſebat, donec tragœdiâ per 24 horas circiter actâ, vitæ brevis ſcenam clauſit.

Cuncta, quibus uſa eſt medicamenta, ſingulatim referre haud opus eſt. Tam notis pleriſque, quam novis auxiliis, intus, foras, novo et pertinaci malo obviam itum eſt. Præ aliis per totum vitæ (nam et idem erat morbi terminus) decurſum, profuerunt tinctura rhabarbari ex aqua cinamomi tenui parata, parca et ſæpius repetita doſi exhibita; et linctus ex oleo amygdalino, ſyrupo pectorali et ſapone pauciſſimo confectus. In ipſis vero extremis angoribus ad vomitum ſedandum adhibita ſunt ea quæ acidum aut acre temperare, obtundere ſolent; aromata grata, mitiſſima, anodyna, demum et ipſa ſoporifera, at fruſtra omnia: alvus interea nec ſponte ſoluta eſt, neque ullis ceſſit irritamentis.

Atrocis morbi cauſas atque ſedes rimari animus erat; quod, impetrata venia, poſtridie aggredior;

gredior; priuſquam vero ad diſſectionem manus admoveo, præcipuorum ſymptomatum conſpectum, quibuſcum à carceribus ad metam uſque colluctabatur, coram ſiſtere haud forte abſonum videbitur.

1. Pulſus nunquam non turbatus erat, parvulus, tremulus, frequentiſſimus.

2. Reſpiratio ſemper naturali crebrior, noctu quam interdiu difficilior.

3. Id quoque obſervandum, quo laxior amictus, etiam interdiu, eo crebrior reſpiratio; quanto veſtis arctior thoracem et abdomen cingens, tanto erat reſpiratio naturali ſimilior.

4. Decumbenti etiam eadem actio difficilior; inde evenit, ut poſtquam primum carpſiſſet ſomnum, cætera noctis pars plerumque ſedenti in gremio nutricis abiit.

5. Tuſſis, inquietudo, febricula, plus minus, dum ad ſanitatem proxime accedere viſa eſt, noctu aderant, et ſemper quam interdiu moleſtiores.

6. Vomitiones frequentes ſine cauſa evidenti ſæpius eam fatigabant: egeſta, cruda, et varia; nunc acida, nunc putreſcentia, ſubpinguia, fetida.

7. Dejectiones ſurſum egeſtis ſimillimæ.

8. Carnium quolibet modo præparatarum odor vomitiones crudeles haud raro ciebat; tanto tamque infelici ſenſu prædita erat.

9. Quoties alvus aſtrictior, toties major aderat ad vomendum proclivitas; at ventris fluxus quandoque

quandoque enormis et diuturnus plus damni intulit, quam vomitio.

10. Urinam insigni imbutam esse acrimonia docuit odor, spiritus instar urinosi plerumque acris: linteamina colore flavo tingebantur.

11. Et cutis quandoque simili tinctura suffusa est.

12. Humor iste, qui pone aures infantum excerni solet, in nostra etiam maxime fetidus erat.

13. Ingenium ei erat mite, placidum, et malorum patiens: si quando autem accensa esset ira, mirum quantum excandesceret: pari tamen celeritate extinguebatur, alioquin a suffocatione illico periisset.

Crederet, opinor, unusquisque rerum medicarum gnarus, ex historia jam tradita morbum esse insolitum; vim ventriculi imprimis labefactatam; turbatas secretiones, vitiatum sanguinem, pulmones male functos officio; forte et hepar culpa non caruisse. Quis vero unquam conjecturis assecutus esset divisum fuisse septum transversum; per ejus rimam in ipsa pectoris penetralia ventriculi amplam portionem et intestinorum partem insignem irrupisse? Hæc vero et plura docuit ipsa cadaveris dissectio, quam postero mane, comite H. Delanoy Pigot, chirurgo Wandsworthiensi perito, institui.

Corpusculum exsuccum, et mirum in modum unius Νυχθημέρου intervallo exinanitum lustramus. Quoad partium formam et magnitudinem omnia

omnia recte, niſi quod thorax naturali longior videretur et anguſtior: coſtæ ſiquidem, minus quam ſolent obliquè poſitæ, ad corporis axin rectiùs ſpectabant.

Ilia ſiniſtra livor occupaverat, tanquam gangræna fuiſſent affecta: circa humeros et brachia haud paucæ veſiculæ cernebantur; quarum aliæ liquore rubello, aliæ virideſcenti, flaveſcenti aliæ ſcatebant.

Diviſam cutem, muſculoſque tenues ſubtus jacentes tunica cellularis omni omnino adipe vacua intercurrebat.

Ventre aperto, inferior omenti margo ne vel minima fæta pinguedine, vixque ad umbilicum protenſa in conſpectum venit. Inteſtinorum etiam tenuium portio, imuſque ventriculi fundus; deinde hepar magnum palleſcens; ſub cujus coſta latebat veſica fellea, ampla, turgida, fundo ſurſum, cervice deorſum rectius quam in ſanis ſolitum ſpectante. Hæc forfice recluſa bilis ſpiſſæ, nigricantis ferme ſeſcunciam effudit: at quanquam ex plaga patula haud ſine preſſura; uſque adeo craſſa tenaxque erat. Vicina omnia ſumma flavedine tingebantur. Ileon inteſtinum hinc inde inflammari videbatur: Colon ſuo loco abfuit: ſplen, renes, reliqua, ſana.

Reſciſſis deinde cute muſculiſque, caute ſternum ad jugulum uſque dividimus. Aſt diductis plagæ marginibus, ſpectaculo, quantum novi, nunquam antea viſo, percellimur. In ſiniſtrum quippe pectoris antrum, magna ventriculi portio

ſeſe

ſeſe intruſerat, tam pulmonum lobos, quam ipſum pericardium, et in eo cor, ex integro abſcondens.

Diducto tandem ventriculo, quid ſubtus lateret inſpecturi, ilei partem tres circiter palmas longam; cæcum, ejuſque appendicem, una cum coli portione haud parvâ, omnia uno eodemque tecta hoſpitio detegimus.

Rei novitate commotus, omnia rurſus intueor; anceps ne forte vulnus inter ſecandum diaphragmati inflictum viſceribus portam aperuiſſet. At inſpectio quam maxime accurata dubium omnino ſuſtulit; docuitque id olim fiſſum, diviſum vel perruptum fuiſſe: nam ſepti hiantis margines perfecte occalluere; neque ullibi conſpicienda erant plagæ recentis indicia.

Quum itaque conſtabat nullam a nobis diaphragmati illatam fuiſſe vim, cuncta in locis quibus antea collocata erant ſtudioſe reponimus, ſingulatim omnia et adhibita diligentia luſtraturi.

Septum tranſverſum ab oſſe ſterno, et cartilaginibus anterius diremptum, et ad centrum uſque tendinoſum, diviſum, retractumque, arcum lunatum tenſum formaverat; cujus cornua ad coſtarum fines cartilaginoſos, dextro latere ſterno propiùs, remotius ſiniſtro, pertingebant: ſicque ſinus effectus eſt inæqualis, ſiniſtro quàm dextro latere patentior.

Per hunc amplum ſinum, ſublata viſcera, in ſiniſtro thoracis angulo, inter coſtas et cordis apicem tutas adeo adepta ſunt latebras, ut neque

proprio pondere, neque valida ſuccuſſione, neque mutato, quacunque demum ratione, corporis ſitu, in priſtinas ſedes unquam deduci potuiſſe judicabam: In *priſtinas* dico, quoniam primitus ante partum ſic ſita fuiſſe haud temere credendum eſt. In ipſo etenim partu malum accidiſſe, plurima ſunt quæ, ut ita credam, faciunt.

Saccus ille ventriculi, qui ingeſta per œſophagum immediate accipit, multo quam ſolet amplior, ſuum locum obtinebat; ſolito etiam pallidior et tenuior: reliqua pars ſurſum protruſa, deinde oblique retrorſum, ſupra ſepti arcum elevabatur; in ipſo tamen tranſitu a margine ſepti anguſtatum notavimus.

Has tandem emenſus fauces in amplum ſatis utriculum rurſus excrevit; qui arcuato ſepto, tanquam ſcamno incumbens, omnem pectoris ſiniſtri ambitum ſibi vindicabat. Corculum interea, nam tale revera fuit, ſupra ipſam dorſi ſpinam detruſerat; pulmonumque lobos ejuſdem lateris eouſque coarctaverat, ut omnino ſedibus pulſos, aut nullos fuiſſe, pene crediderimus.

Pylorus ex hoc utriculo juxta tertiam coſtam emergens, et ſinuoſâ flexura deorſum vergens, in duodenum abiit; quod, qua parte ſepti jugum in deſcenſu tranſivit, et ipſum coanguſtari debuerat, quotieſcunque ventriculus aut cibis aut flatibus intumuit. Quumque ita a naturali curſu devium aberrare neceſſe habuit, nil mirum ſi ductus communis biliarius, a recto inteſtini itinere tenſus et fere connivens, ſuo ſemper munere fungi non poterat: hinc cutis, hinc urina quandoque

doque discolores; et hinc sine bile dejectiones.

Tubi intestinalis anfractus presse sequentes iterum in thoracis antra ducimur: nam supra ipsum diaphragma, et pone ventriculum, portio ilei aliquot palmas longa convoluta delituit: exitum finemve quærentibus in conspectum venit appendix vermiformis, et cæcum fecibus distentum, amplum, incumbente ventriculi mole compressum, ejusque nisu extremo antri angulo adaptatum: denique annexa coli pars circiter dimidia, crebris et profundis sinubus notabilis.

Qua parte colon tensum septi limbum superabat, id tantum non absciſſum invenimus; nam ventriculus sæpius repletus, cedentis intestini latera contra membranæ renitentis marginem obsistens, ea ita attriverat, seu premendo angustaverat, ut ne quidem fecibus crassioribus trajiciendis aptum videbatur.

His demum attente perspectis, cætera ejusdem cavi contenta exquirere sategimus; et sub firma tectos membrana, quam mediastini parietem esse sinistrum judicavimus, pulmonum lobulos detegimus, arctissime posticæ thoracis regioni undique non adhærentes modo, at firmiter agnascentes dudum officio suo defuisse videbantur. Plexus præterea fibrarum validus, ex membrana cellulosa quasi contextus, totam lobulorum compagem, pleuræque superficiem sic intercedebat, ut nulla ratione seipsos expandere valerent pulmones, si a tergo liberum movendi spatium permisissent intestina et ventriculi portio.

Alterius deinde lateris cavum excutimus, et pertuſa membrana firma, quam pro altera mediaſtini plica habuimus, pulmo dexter ſanus ſatis et integer ſeſe prodidit; quique proculdubio utriuſque munere diu perfunctus eſt.

Paulo infra pulmonis marginem inferiorem, ſupra diaphragma, ſaccus erat quaſi ex membrana cellulari conflatus, qui, forfice apertus, binas circiter uncias liquoris flavo-viridantis, albuminis inſtar gelatinoſi, loculamentis membranaceis contenti, profudit. Num ex hoc fonte profluxerat iſta ſanies, quæ indomabilem tuberculorum vim, faciem, collum, cæteraſque partes ſedantem, enutriverat? Ita quidem veroſimile videtur; nam liquidi in utriſque color idem erat.

Pericardium proxime referatur, quod et ipſum liquore ſimili ſcatebat: effluxit quippe ex apertura ad duas fere uncias humor deſcripto, modo paullulum tenuior magiſque flaveſcens, ſimillimus.

Cor erat exiguum, tactui durum, et in bina æqualia quaſi loculamenta diſcretum: hic enim auricula dextra ſanguine diſtenta, vix cordi magnitudine cederet; ibi ventriculi cruore atro pauco craſſiſſimo farcti: inter utroſque vinculi partes agunt vaſa coronaria, cordis baſin arcte adſtringentia.

Ex ſecta auricula cruor aterrimus, ſpiſſus, corio tenaci opertus exprimitur; ipſius ſacci latera ex venulis varicoſis liveſcentibus tantum non conſtare videbantur.

Sæpius

Sæpius inter ſecandum tam caſu, quam dedita opera, majores venas pertudimus at nunquam alias, tam parum ſanguinis effluxiſſe memini, iſque erat craſſus et niger, tanquam ſero omni et diluente lympha orbatus.

Luſtratis jam et ſua ſede viſceribus, ventriculum eximere partemque inteſtinorum libitum eſt, ut quantum ad formam ſitumque mutata eſſent, exploratum haberem: dum vero manus operæ admoveo, leniterque ventriculi fundum prehendo, ecce omnino putris, et ne tactus quidem levis patiens, pars ima intra digitos collabaſcit.

Nulla aderant inflammationis gangrænoſæ indicia: non rubor, non ſtriæ, nulla ſtigmata liveſcentia: omnis albore pallet, et ſic tam nulla vi in tabem defluebat, ut potius acribus eroſam, vel humidis laxatam fuiſſe compagem, quam gangræna corruptam judicarem.

Nec intuenti ventriculi ſitum hoc abſonum videbitur. Heic enim ex imo viſceris hujus fundo, ad ſummum pylori jugum, aſcenſus omnino acclivis: in noſtra etiam ſublata erat vis ſepti renitens, cujus ope in altum attolli unice valuerant ventriculi contenta: plus itaque laboris muſculis ventris ſolis peragendum erat, quod quam in aliis peragitur, ſociato diaphragmatis nixu. Ingeſta proculdubio ſuam ſequi indolem, favente mora et quiete debuerant; quibus conditionibus ſi addamus perpetuum humoris gaſtrici ſtillicidium in unum quaſi ventri-

culi punctum, tam vomitus funeſti ortum, quam putredinis cauſam perſpectam habere poſſumus.

Hinc quoque manifeſtum erit, quare noctu quam interdiu, procumbens quam erecta, laxe quam arcte veſtita, pejus ſe habuit: et quantas anxietates, ægritudines, et moleſtias, pati oportuit, quoties ſitus horizontalis, habituſque parum ſtrictus, aſcenſum facilem cibis in pectora præbuere? Cor ipſum mole prægravari neceſſe erat; luctamque dubiam contra hoſtes irruentes ſolum ſuſtinere.

Tradita hucuſque rerum hiſtoria ſymptomatum explicationem promptam, ni fallor, reddidit, ideoque mihi ſupervacaneam: ſupereſt tantum modo, ut aliqua, quæ in mentem mihi ſæpius morbum immedicabilem penſitanti venerunt, at pauciſſimis, referam.

1. Patet enim imprimis, animal poſſe vivere, vegere, lætari, et quodammodo valere, cui finditur vel diſrumpitur diaphragma.

2. Ideoque minus huic metuendum, in pectore pertundendo, quoties empyema aut hydrops remedium anceps experiri ſuadeant.

3. Ita affectum eſſe diaphragma, (1.) ſi ampla hianſque plaga fuerit, forte dignoſcendum, ex ipſa thoracis figura productiore, minus obliquo coſtarum ſitu, et læſa ſimul reſpiratione.

4. In morbis infantum, quorum natura videatur reconditior, ex accurata partium externarum contemplatione, indagine, fortaſſis aliquid lucis elici queat: ideoque nequaquam prætermittendum.

5. Quotieſcunque

5. Quotieſcunque tubercula, puſtulæ exanthemata, ſingularem aliquam corporis regionem occupant, ibi ſubtus, in vicinia, malum ſomitem latere ſuſpicandum.

Ita tandem caſum, nulla arte ſanabilem, et forte nimia diligentia expoſui; id vero ægre te laturum haud quidem exiſtimo: nollent enim neſcire cordatiores in arte viri, quibus ex cauſis præmatura mors ſuperveniat, quotieſcunque cadavera luſtrandi copia conceditur: ipſos etenim medentes non ſolum rerum gnaros peritoſque reddit, verum etiam tam orbatis dolorem minuit, quam dedecus aufert arti, palam perſpectum habere, nullis remediis, nulla ope, ne quidem tua, ſupremam ſortem potuiſſe protrahi.

Vale, vir candide, diuque felix orbi interſis, bonarum artium patronus, medicæque juventutis pater atque princeps.

TRANSLATION
OF
A LETTER
ON A
Ruptured Diaphragm, and a Change in the Situation of ſome Viſcera, obſerved in the Body of a Female Child Ten Months old;

ADDRESSED TO
RICHARD MEAD.

WHEN I lately made mention, in thy preſence, of a caſe which appeared to me altogether ſingular, thou adviſedſt that I ſhould commit the whole hiſtory of it to paper: I have therefore attempted to comply with thy advice; and this I have done the more willingly, as being certain, that what had not diſpleaſed thee in private, would be agreeable to many if made public. Thus much will certainly be attributed, and that with juſtice, to the authority of a man, whoſe deareſt object and ſtrongeſt wiſhes are, to deſerve well of every uſeful art, of his fellow citizens, and of human-kind in general.

But that the caſe may appear more clear, I intend to commence my hiſtory from the firſt origin of it, giving a relation of every thing I was witneſs of, with all the fidelity and ſimplicity in my power.

A woman, about twenty-one years of age, of a genteel family, reſpectable both for her keen lively wit and agreeable perſon, of a tall ſlender habit, a temperament verging towards the ſanguineous, generally happy in moderate health, miſcarried, about the fifth month of pregnancy of her firſt child.

Unfortunately for her, this happened while ſhe was on a viſit to a relation, in a village far diſtant from her friends and home. The caſe being urgent, the neareſt midwife was called in; who being in great meaſure ignorant of the art, and only uſed to the robuſt women of the country, treated the uterus of this delicate perſon ſo rudely, that ſhe excited from the lacerated veſſels an hæmorrhagy, or flooding, ſo violent that no art could ſtop it: at length a moſt alarming *ſyncope*, or fainting, ſupervened, which, for the preſent, both took off the motion of the fluids and the action and force of the ſolids. After ſome time, however, ſhe revived, and at length recovered, but in ſuch a manner, that the paleneſs of her face and limbs evidenced great loſs of the vital ſpirits.

She was ſcarcely recovered from theſe great misfortunes, when ſhe again became pregnant; but it would be melancholy to relate her miſer-

able

able condition through the whole courſe of her pregnancy; all the moſt dangerous complaints which uſually afflict pregnant women, afflicted our patient in the worſt degree.

At the proper time, however, ſhe was brought to bed of a girl; whoſe hiſtory, with reſpect to diſeaſes, death, and opening the body (the circumſtances of the mother having terminated happily) I now undertake to relate.

The body of the new-born infant ſeemed free from fault: it was, however, little and weakly; its ſkin too flaccid, and ſomewhat too much wrinkled, which evidenced its having received too little nouriſhment; but no one will wonder at this, who conſiders the hiſtory given of the mother.

The reſpiration of the infant was too frequent from its birth, and a few days after came on a ſtuffing and heavineſs of the head, as if from having caught cold, with a conſiderable excretion of a watery mucus from the eyes, noſe, and mouth, which, as often as it was obliged to ſuck, almoſt threatened ſuffocation. On this account it would cry, and go into more violent paſſions than is uſual at ſo tender an age; ſo that the attendants would often fear, leſt in a ſhort guſt of paſſion it ſhould expire.

By proper medicines, eſpecially gentle laxatives, it ſeemed in ſome meaſure freed from the cold and ſtuffing of the head: ſtrength alſo gradually increaſed as it grew bigger, and the parents were induced to hope, that the health of their

their little delicate daughter would now become more ſtrong and firm.

The infant was ſeized with a ſudden vomiting, more frequently than is common to moſt other children; the matters thrown up, neither reſembled crude nor digeſted food, but a kind of purulent pap, ſometimes acid, ſometimes of a fœtid ſmell; the ſtools alſo were too frequent, and exactly of the ſame kind of matter: the reſpiration in the mean time frequent, laborious, and during the night extremely difficult. Theſe ſymptoms were the more diſcouraging, as they did not yield to remedies which uſually give relief in ſimilar complaints.

About the ſeventh month ſome exanthemata or eruptions appeared, firſt on the face, then on the neck, ſhoulders, breaſt, and to the ends of the fingers. They were round, broad, like flea-bites, red, hardiſh, and extremely troubleſome, with itching; by degrees they were raiſed into little veſicles, and at length filled with a thin pellucid ſerum: being dried into chaffy ſcales, they fell off, leaving marks of a livid red colour, which remained a long time.

Theſe eruptions had appeared after a fever of a few days continuance; but as they obſerved no regular type either in their coming on or going off, as the itching was extremely troubleſome, and a new crop always ſucceeded the old one, I concluded the diſeaſe would be of long duration, and had taken a deeper root than what could be accounted for from an irregular fever; and

and as the force and itching of the exanthemata coming out, daily increaſed, I ſuppoſed the diſeaſe derived its increaſe from ſome impure matter lodged within, vitiating the humours. I therefore applied to the mildeſt purgatives, ſuch as would obtund the acid or acrid matter, and thoſe which ſeemed proper to reſolve the viſcid. And, leſt the manner of diet, though the moſt proper for the nurſe, ſhould not ſo well agree with the tender infant, I ordered both of them to eat nothing but broth, the moſt tender animal food, and ſuch as was of moſt eaſy digeſtion. By this means the number of tubercles, the itching, and other complaints, were in a ſhort time diminiſhed, and the health of the infant, hitherto doubtful, was in ſome meaſure eſtabliſhed.

It had reached the beginning of the tenth month of its age, when the nurſe, by order of the parents, began to wean it. It bore this without much inconvenience; on the ſixth day, being coſtive, it took its uſual ſolutive draught, from which it had two ſtools, and was well. Towards evening it was ſeized with a moſt violent vomiting, ariſing, ſo far as could be perceived, from no cauſe; but which harraſſed the little ſufferer, almoſt without intermiſſion, for the ſpace of twenty-four hours, and then cloſed the ſcene of a ſhort life.

It is not neceſſary to mention ſingly all the remedies made uſe of. This new and obſtinate diſeaſe was oppoſed, both by moſt known remedies and ſome new ones, internal and external.

Through

Through the whole courſe of life (for this was the terminus of the diſeaſe) the tincture of rhubarb, made with weak cinnamon-water, and given in ſmall doſes often repeated; and a linctus made of oil of almonds, pectoral ſyrup, and a little ſoap, were more uſeful than any other remedies. In the laſt fatal ſtruggles, the moſt mild, grateful aromatics, anodynes, and even ſoporific medicines, which uſually moderate and obtund the acid or acrid matter, were exhibited in order to take off the vomiting, but all in vain. No ſpontaneous motion to ſtool now occurred, nor did the bowels yield to any ſtimulating remedies.

I had a wiſh to ſearch out the cauſes and ſeat of this violent diſeaſe; and having obtained permiſſion, I attempted it the next day. But before I enter upon the diſſection, it will not be amiſs, perhaps, to bring into one view the principal ſymptoms under which the infant laboured from firſt to laſt.

1. The pulſe was always diſturbed, ſmall, tremulous, and very frequent.

2. Reſpiration was always quicker than natural, and more difficult in the night than the day.

3. It muſt be obſerved alſo, that even in the day-time, the reſpiration became more difficult, in proportion as the cloaths were put on more looſely: and the more tightly they bound the breaſt and belly, the more natural was the reſpiration.

4. The action of breathing alſo was more difficult

ficult when lying; hence it happened, that, after the firſt ſleep, it commonly ſpent the reſt of the night ſitting in the boſom of the nurſe.

5. When the child ſeemed in its beſt ſtate of health, it was afflicted in the night, more or leſs, with cough, reſtleſſneſs, and feveriſh heat; and theſe were always more troubleſome in the night than the day.

6. It was often diſtreſſed with frequent vomiting, without evident cauſe: the matters thrown up were crude and various; ſometimes acid, ſometimes putreſcent, fattiſh, or fœtid.

7. The diſcharges by ſtool were like thoſe thrown up by vomiting.

8. It was endowed with ſo ſtrong and unhappy a ſenſe of ſmelling, that the ſmell of animal food, any-way prepared, often excited ſevere vomitings.

9. Whenever it was coſtive, there was a greater tendency to vomit; but a diarrhœa, ſometimes violent and continuing long, did more harm than vomiting.

10. The urine was affected with great acrimony, as appeared by the ſmell, which was commonly acrid, like the ſpirit of urine: it tinged cloths of a yellow colour.

11. The ſkin was ſometimes covered with a ſimilar taint.

12. The humour commonly excreted behind the ears of infants, was alſo in this extremely fœtid.

13. Its diſpoſition was mild, placid, and pa-

tient under ſufferings: but if at any time its paſſion was kindled, it roſe to a wonderful pitch; the paſſion, however, was extinguiſhed with equal celerity, otherwiſe it would immediately have periſhed from ſuffocation.

Every one ſkilled in medicine, I think, will ſuppoſe, from the hiſtory now given, that the diſeaſe was a new one; that the powers of the ſtomach eſpecially were debilitated, the excretions diſturbed, the blood vitiated, and that the lungs did not properly perform their office; perhaps alſo they may ſuppoſe the liver had not been free from fault. But who would ever have conjectured that the *ſeptum tranſverſum* was divided aſunder, and that a large portion of the ſtomach, and great part of the inteſtines, had ruſhed through this opening into the cavity of the breaſt? Yet this, and even more, the diſſection of the body diſcovered to us; which the next morning I performed, accompanied by H. Delanoy Pigot, a ſkilful ſurgeon of Wandſworth.

We found the body ſhrivelled, and wonderfully ſhrunk, in the ſpace of twenty-four hours. As to the figure and magnitude of the parts, every thing was right, except that the breaſt ſeemed longer and narrower than natural. The ribs, indeed, were not ſo obliquely placed as uſual, but lay too flat towards the axis of the body.

The left iliac region was of a livid colour, as if it had been affected with gangrene: many veſicles

ſicles were viſible about the ſhoulders and arms, ſome of which contained a reddiſh, ſome a greeniſh, and others a yellowiſh liquor.

Having cut through the ſkin and thin muſcles lying underneath, we found the *tunica cellularis* quite free from fat.

The belly being opened, we found the lower margin of the omentum wholly free from fat, and ſcarcely reaching to the navel. A portion alſo of the ſmall inteſtines, and the loweſt part of the ſtomach, were viſible; next we obſerved the liver, large and pallid; under the ſide of which lay concealed the *veſica fellea*, large and turgid, the bottom lying more directly upward, and the neck more directly downward, than what is uſual in healthy perſons. This being opened with the ſciſſars, it was found to contain nearly an ounce and an half of a thick blackiſh bile; but though the wound was open, it was too thick and tough to run out without preſſure. The neighbouring parts were all tinged of the deepeſt yellow; the ileon ſeemed here and there inflamed; the colon was removed from its proper place; the ſpleen, kidnies, and other parts, were ſound.

Having again cut through the ſkin and muſcles, we cautiouſly divided the *ſternum* up to the *jugulum*. But, the edges of the wound being drawn aſide, behold! a ſight, never, that I know of, before ſeen. A great portion of the ſtomach had thruſt itſelf into the left cavity of the breaſt, wholly covering the lobes of the

lungs, the pericardium itſelf, and in it the heart.

Having drawn aſide the ſtomach, to ſee what might be concealed under it, we found a part of the ileon, about three times the breadth of the hand, the cæcum and its appendage, together with no ſmall portion of the colon, all concealed in one and the ſame cavity.

Struck with the novelty of the thing, I again examined the whole; doubtful leſt a wound made in the diaphragm, in diſſecting the body, might have opened a paſſage to theſe viſcera. But an inſpection, as accurate as poſſible, removed all doubt, and convinced me that the diaphragm had been ſplit, divided, or ruptured for ſome time; for the edges of the rupture were perfectly hardened, nor were there any marks of a recent wound any where to be ſeen.

As therefore it appeared that no injury had been done to the diaphragm by us, we carefully replaced all the parts in the ſituation they had been in before, that we might examine them one by one with proper attention.

The *ſeptum tranſverſum* being torn off from the *os ſternum* and cartilages on the anterior part, and divided and drawn back to its center, had formed a tenſe lunar arch; the corners or horns of which, on the right ſide, reached nearer the cartilaginous terminations of the ribs; on the left they were more diſtant; and thus there was an unequal ſinus formed, more open on the left than on the right ſide.

The

The viſcera having been carried upward through this ample ſinus, had gained ſo ſafe a ſeat, that I judged it impoſſible that they could ever have fallen back into their *priſtine* ſituation, either by their own weight, or any ſhaking or change in the poſture of the body, in whatever manner this had been made. I ſay their *priſtine* ſituation, becauſe we are not haſtily to ſuppoſe that they were in this ſituation before the birth of the child. Many reaſons induce me to believe that the miſchief happened in the birth.

The bag of the ſtomach, which immediately receives the ingeſta from the œſophagus, was much wider than uſual, and alſo paler and thinner, but remained in its proper ſituation. The other part, being puſhed upwards, and then obliquely bent backward, was elevated above the arch of the ſeptum: in this paſſage, however, we obſerved that the margin of the ſeptum had made that part of the ſtomach narrower, *or formed a kind of ſtricture upon it.*

Having paſſed theſe ſtraits, it was again enlarged into a bag ſufficiently capacious, which lay upon the arcuated ſeptum, as on a bench, and occupied the whole ſpace of the left breaſt. It had thruſt the little heart, for ſuch it really was, upon the ſpine of the back, and had ſo ſtraitened the lobes of the lungs on that ſide, that one would almoſt have thought they had been driven from their ſituation, or that there had been none at all.

The pylorus emerging from this bag near the

third rib, and bending downward with a ſinuous flexure, ended in the duodenum; both of which muſt have been ſtraitened or conſtricted, in the part where it paſſed over the ridge of the ſeptum, as often as the ſtomach had been ſwelled with food or wind. As therefore the duodenum had been under a neceſſity of deviating from the natural courſe, it is no wonder if the common biliary duct, bent from the ſtrait line of the inteſtine, and almoſt cloſed, had not always been able to perform its office: on which account the ſkin and urine were ſometimes diſcoloured, and diſcharges by ſtool, without bile.

We cloſely followed the winding tract of the inteſtinal tube, and were again led into the cavity of the thorax: for a convoluted portion of the ileon, ſome hands breadth in length, lay concealed above the diaphragm, and behind the ſtomach. Searching for its exit or end, we found the vermiform appendage, and the cæcum diſtended with fæces, large, and compreſſed with the incumbent load of the ſtomach, by the motion of which it was adapted to the extreme angle of the cavity. About half the colon, annexed to it, was remarkable for frequent deep ſinuoſities.

Where the colon had ſtretched beyond the tenſe border of the ſeptum, was the only part of it we found not cut and worn; for the ſtomach, often full, preſſing the ſides of the yielding inteſtine againſt the edge of the reſiſting membrane, had ſo worn or conſtricted it by preſſure, that

that it ſeemed by no means ſuited to admit the thick fæces to paſs through it.

Theſe being at length attentively viewed, we ſet ourſelves to examine the other contents of the ſame cavity; and under a firm membrane, which we took to be the left ſide of the mediaſtinum, we found the lobules of the lungs concealed, and every where not only cloſely adhering to the poſterior region of the thorax, but firmly growing to it, ſo that they ſeemed long to have failed in performing their function. A ſtrong plexus of fibres alſo, formed as it were of the cellular membrane, connected the whole ſtructure of the lobules and ſuperficies of the pleura, ſo together, that the lungs could by no means have expanded themſelves, if the inteſtines and part of the ſtomach had left a free ſpace behind.

We next examined the cavity on the other ſide; and, having cut the firm membrane, which we took to be the other folding of the mediaſtinum, the right lung appeared ſufficiently ſound and compleat; and which, no doubt, had long performed the office of both.

A little below the inferior edge of this lung, above the diaphragm, was a bag, formed as it were of cellular membrane, which being opened with the ſciſſars, was found to contain about two ounces of a yellowiſh-green liquor, gelatinous like the white of an egg, and contained in membranous follicles.---Had the ſanies, which gave ſuch irreſiſtible force to the tubercles affecting

the face, neck, and other parts, ariſen from this ſource? It ſeems very probable, for the liquids in both were of the ſame colour.

The pericardium was opened next, and was found to abound with a ſimilar liquor. There flowed out from the aperture about two ounces of an humour exactly like that deſcribed above, only it was a little thinner and more yellow.

The heart was ſmall, hard to the touch, and divided as it were into two unequal partitions; for the right auricle, diſtended with blood, almoſt equalled the bulk of the heart; the ventricles were ſtuffed with a ſmall quantity of black thick blood: between both ventricles the coronary veſſels acted as vinculi, or ties, binding tightly the baſis of the heart.

The auricle being cut open, a moſt black ſpiſſid blood, covered with a tenacious membrane, was ſqueezed out from it. The ſides of the bag itſelf ſeemed almoſt wholly formed of ſmall livid varicoſe veins.

We often, in diſſecting, both by accident and with deſign, wounded the larger veins; but I never remember that any thing iſſued out but a little blood, which was thick and black, as if deprived of all its ſerum and diluent lymph.

Having now examined the viſcera, and their ſituation, I wiſhed to take out the ſtomach and inteſtines, that I might ſee how much their form and ſituation had been changed. But on attempting this, and gently taking hold of the bottom of the ſtomach, behold it was altogether

putrid,

putrid, not bearing the ſlighteſt touch, but the lower part of it fell to pieces between my fingers!

There were no ſigns of a gangrenous inflammation; no redneſs, ſtriæ, or livid ſpots appeared: every part was of a pale white, ſo that I imagined the ſtomach had not fallen into this waſte from any violence or force, but that its ſtructure had rather been eroded by ſome acrid matter, or relaxed by moiſture, than corrupted by gangrene.

Nor will this ſeem improbable to any one viewing the ſituation of the ſtomach; for the aſcent from the bottom of this viſcus to the higheſt point of the pylorus, was altogether ſteep; in this ſubject, alſo, the re-action of the diaphragm was loſt, by the help of which only the contents of the ſtomach can be raiſed upwards. More labour therefore reſted on the muſcles of the belly, than in other caſes where the action of the diaphragm is joined with them. The ingeſta muſt, without doubt, from their delay and reſt in the ſtomach, have retained their own nature; to which, if we add the conſtant dropping of the gaſtric juice as it were on one part of the ſtomach, both the origin of the fatal vomiting, and the cauſe of the putridity, will be evident.

Hence alſo it will appear why the infant was worſe in the night than the day, when lying than in an erect poſture, and when looſely clad than when tightly bound; and how great anxiety, ſickneſs,

and inconvenience, it must have suffered, as often as its horizontal situation, and loose dress, gave an easy ascent to the food into the breast. The heart itself must have been greatly incommoded by the bulk of the unnatural contents of the breast, and have alone sustained a doubtful contest against the rushing foes.

The history of what appeared on dissection, thus far delivered, gives, if I mistake not, an easy explication of the symptoms, and therefore unnecessary for me to attempt; it only remains, that I relate briefly a few things which occurred to me, when often contemplating this incurable disease.

1. First then it appears, that an animal may live, be strong, chearful, and in some measure well, in which the diaphragm is split or ruptured.

2. Therefore less is to be feared from this accident, in opening the breast, as often as an empyema, or dropsy, persuade us to try this doubtful remedy.

3. If the wound be wide and open, we may, perhaps, know that the diaphragm is thus affected, (1.) from the figure of the breast being too long; from the less oblique situation, than usual, of the ribs; and the respiration being at the same time injured, or rendered difficult.

4. In diseases of children, the nature of which seems very abstruse, some light may perhaps be gained from an accurate view and examination of the external parts; and therefore it should not be omitted.

5. As

5. As often as tubercles, puſtules, exanthemata, affect ſome particular part of the body, we may ſuſpect that the fomes of the diſeaſe lies not far beneath.

Thus, at length, I have explained a caſe curable by no art; but, perhaps, I have been too minute: this, however, I think will not diſpleaſe thee, as the ſincere in the art are unwilling to be ignorant from what cauſes premature death may ſupervene, as often, at leaſt, as an opportunity of examining the body is granted them: for the diſſection of ſuch bodies not only renders the phyſicians more ſkilful, but it alſo leſſens the grief of parents or friends for the deceaſed, and takes off the odium from our art, when it is publicly known, that by no remedies, by no help, no not even by thine, the final period of life could have been protracted.

Vale, vir candide! May'ſt thou long be happy in life, the patron of uſeful arts, the father and encourager of medical youth!

IT was a cuſtom very early introduced into the Royal Society, to inſert Remarks on important Publications, that had any reference to the objects of its inſtitution. It was not unuſual to refer ſuch works to ſome junior member, who made an epitome of them, or offered ſuch critical remarks as he deemed proper to lay before this learned body. Of this kind is the following Eſſay. The ſucceeding volume was put into the hands of the learned Dr. William Watſon, of Lincoln's-inn-fields: his obſervations were printed in the Philoſophical Tranſactions, vol. xlviii. *p.* 141. *ann.* 1753; *and this is followed by a letter from Philip Miller, F.R.S. to Dr. Watſon, concerning a miſtake of Profeſſor Gmelin, reſpecting the* Spondylium vulgare hirſutum *of Caſpar Bauhin, vol.* xlviii. *p.* 153.

For ſeveral years paſt, the Society has not been in the practice of thus epitomizing the works of the learned; it was probably ſuggeſted, that it gave the Tranſactions of the Society too much the form of a Bibliotheque: it may, however, be doubted, whether this reformation has added to the merit and reputation of this collection of immenſe literature, or been the means of admitting more original and important communications.

Editor.

AN ACCOUNT OF SOME OBSERVATIONS AND EXPERIMENTS MADE IN *SIBIRIA*;

Extracted from the Preface to the "*Flora* "*Sibirica*, ſive *Hiſtoria Plantarum Sibiriæ*, "*cum tabulis æri inciſis*. Auct. D. *Gmelin*. "Chem. et Hiſt. Nat. Prof. *Petropoli* "1747. 4to, vol. i.*"

Read before the ROYAL SOCIETY, February 11, 1748.

BY direction of the late Empreſs of Ruſſia, ſeveral Members of the Royal Academy of Sciences at Peterſburg undertook a journey into Sibiria, in order to enquire into the natural hiſtory of that country, and to make ſuch experiments and obſervations as might tend to give a

* Philoſophical Tranſactions, N° 486, p. 248.

juſt

juſt idea of that almoſt unknown region, and to the improvement of phyſics in general.

Dr. John George Gmelin, Profeſſor of Chemiſtry and Natural Hiſtory at Peterſburg, was ſent at the head of this deputation, who, beſides ſeveral of his colleagues, and ſome ſtudents, had a painter or two, a miner, huntſman, and proper attendants in his retinue.

He ſet out upon this expedition in Auguſt 1733, and returned to Peterſburg in February 1742, after having ſpent nine whole years in viſiting almoſt every part of Sibiria.

The fruits of this undertaking are deſigned to be communicated to the public; and one volume of the Hiſtory of Plants has already appeared, under the title of "*Flora Sibirica, ſive Hiſtoria Plantarum Sibiriæ, Tom.* I. *continens Tabulas Æri inciſas L. Auctore D.* Joh. Geo. Gmelin, *Chem. et Hiſt. Natur. Prof.* Petropoli *Typis Academiæ Regiæ Scientiarum* 1747." This is intended to be followed by ſeveral others, containing not only a deſcription of the plants, their *locus natalis*, &c. but their uſes among the inhabitants, ſo far as the Profeſſor could get information concerning them.

In a large preface to this firſt volume, the ingenious and indefatigable author has given us a conciſe account of Sibiria in general, its rivers, lakes, mountains, mines, the nature of the ſoil, fertility, &c. with ſeveral judicious experiments and remarks on the altitude of the earth above the level of the ſea; but eſpecially on the qua-

lities of the air in that climate; an abſtract whereof, at firſt drawn up for private entertainment, was thought not unworthy of more public notice, and is therefore addreſſed to the Royal Society.

The country, whoſe natural hiſtory Dr. Gmelin has collected, is of vaſt extent. It is bounded by a chain of mountains called the Werchoturian and Vralian, on the weſt; by the ſea of Kamtſchatka, on the eaſt; and comprehends all thoſe countries that lie betwixt the *Mare Glaciale*, and the borders of the Kalmucks and Mongales, to the very confines of China.

The rivers which water this tract are numerous; ſome of them large, and even receiving ſtreams in their courſe, which in other countries would be looked upon as capitals themſelves. The ſpace they meaſure is no leſs conſiderable. The Jaïk is the firſt river of note on the weſtern ſide. It riſes under the latitude of 54, of longitude 78, and runs into the Caſpian in 47 of latitude, and 74 of longitude. The Irtiſch riſes in the country of the Kalmucks, latitude 46½, longitude 103; and empties itſelf into the Oby, latitude 61, longitude 86. The Oby riſes under 52 latitude, 103½ longitude, and loſes itſelf in the *Mare Glaciale*, latitude 67, longitude 86, after running a courſe of near eight hundred leagues, and receiving a great number of rivers of conſiderable note. The Jeniſea is not much leſs than the Oby. The Selenga takes its riſe under latitude 48, longitude 114, runs into the

lake

lake Baical in 51° 20″ latitude: with many others equally conſiderable, which it would be tedious to mention.

The water of theſe rivers is for the moſt part freſh, clear, and ſalubrious. In ſome it is a little brackiſh, by the mixture of currents from ſalt lakes and ſprings, which abound in many places. They contain fiſh of various kinds in great plenty, and moſtly of an excellent flavour.

The lake Baical may deſerve ſome mention to be made of it, being one of the greateſt freſh-water lakes yet diſcovered. It extends, according to our author, from the one hundred and firſt degree of longitude, to the one hundred and twenty-ſeventh, being upwards of five hundred leagues in length, and is from twenty-five to eighty leagues in breadth. It is every where deep and navigable; the water is extremely clear, and abounds with great plenty of fine fiſh. It receives a great number of rivers; but the Angara alone runs out of it: which joining the Tunguſca, loſes its name; as this likewiſe does, when it runs into the Jeniſea.

Salt lakes are common in many parts of Sibiria: ſome contain a pure white ſalt, well taſted, and fit for uſe; which, in ſummer, is cryſtalliſed by the heat of the ſun alone, and forms a cruſt on the top of the lake. In ſome this grows ſo heavy, as to break and fall to the bottom. Beſides this kind of pure common ſalt, which is fit for uſe, there is another ſort, of a bitter taſte, much reſembling the *ſal mirabile*,

found in ſeveral lakes in this country. Springs of ſalt water are ſometimes obſerved to riſe in the midſt of freſh water. Our author aſſures us, that he has ſeen ſeveral ſuch; one eſpecially he obſerved riſing through a ſtone, in the bed of the river Angara.

Before we diſmiſs the ſalt lakes, we may juſt mention, that on the banks of the river Kaptendei, where it runs into the Wilvius, are a great number of ſalt ſprings, which afford excellent ſalt; and that, about thirty leagues above this place, along the ſame Kaptendei, on the right hand, is a hill about thirty fathom high, and two hundred and ten long, conſiſting entirely of *ſal gem*.

There are ſome lakes, which, our author informs us, in the memory of man, contained only freſh water, but now are very ſalt. One of this kind, about forty years ago, abounded with freſh-water fiſh, but is now become ſalt, ſmelling ſtrong of ſulphur, with a bitter taſte, and all the fiſh are killed.

The inhabitants aſſured our author, that ſome freſh-water lakes have been by degrees dried up, and that others have appeared where formerly it was dry ground; and that even ſome of theſe new-formed lakes, which at firſt had no fiſh in them, are now very plentifully ſtocked. They have not recourſe to ſubterranean caverns or paſſages for a ſolution of this phænomenon; but aſſert, that ducks, ſea-mews, &c. that live upon fiſh, carry the eggs from one lake to another.

In the deſcription which our author gives us of the courſe of rivers, ſituation of lakes, &c. he takes notice of the ſoil, its barrenneſs, fertility, &c. Theſe are different, as it may be ſuppoſed, in the different parts of ſuch an extenſive climate under ſuch latitudes. About the lake Baical is the moſt fruitful tract, and thence is called the granary of that part of Sibiria. They grow ſome little corn about the latitude of 61. They have made of late ſome trials ſtill further; but the ſucceſs was not known.

In his paſſage through Sibiria, he tells us, that he could ſcarce think himſelf in Aſia, till he got over the river Jeniſea; till then, he ſaw no animals, but ſuch as are common in Europe, at leaſt may be ſeen in the plains waſhed by the lower part of the Volga. The plants and ſtones were of the ſame kind, and the face of the country in general, like other parts of Northern Europe. But from the Jeniſea, to the eaſt, north, and weſt, the climate ſeemed to be wholly different, and as if enlivened with new vigour. It is mountainous; but theſe mountains are intermixed with rich delightful valleys and fruitful plains. The animal that affords the muſk, and the *muſimon* of the ancients, were now to be met with. Many of the moſt common European plants by degrees diſappeared, and others became frequent, which are ſtrangers in Europe. The purity, clearneſs, and ſalubrity of the waters, the exquiſite taſte of the fiſh and fowl, but more eſpecially the different genius and way of life

life of the inhabitants, plainly proved they were got into another climate. This remark our author ſubmits to the conſideration of geographers.

Amongſt the curioſities of Sibiria the Profeſſor mentions a place remarkable for its exceſſive coldneſs in the midſt of ſummer. It is in the province of Jacutſki, about the middle way to Ochotz along the river Jucanan; it is called by the Ruſſians Springing Ice, by the natives the Icy Lake. Three other ſuch places occur within the circuit of eighty leagues.

The provinces beyond the lake Baical are mountainous, with high and wide-extended plains lying betwixt them, which in many places are only covered with barren ſand; ſo that in ſome places one may travel through ſuch deſerts one, two, or three days together, without finding wood enough to make a fire, or any other water than that of ſalt ſprings, which are very frequent; and being dried up by the ſummer heats leave a ſaline cruſt, very much reſembling *Natron*, being of an alcaline nature, with a ſulphureous ſmell.

The country that borders on the rivers Uruncan and Gaſimur is extremely rich and fruitful. The face of the country is delightful, and its produce to the huſbandman almoſt exceeding his hopes: but what renders it ſtill more ſurpriſing is, that a country, whoſe ſoil yields to few in fertility, and the beauty of its bloom, ſhould

yet cover immenſe riches in its boſom. Here are mines of gold and ſilver, which have long been worked to advantage: the veins are rich, and lie ſhallow; yet communicate no poiſonous effluvia to the vegetables that cover them: nor do thoſe diſtinguiſhing marks of ſterility appear here, which in moſt other mining countries are ſo obſervable.

The higheſt part of Sibiria is towards the ſprings of the rivers Argun, Schilca, &c. about the 49th degree of latitude, 130th longitude. This part is deſtitute of marble and lime-ſtone, which are almoſt every where to be met with in the lower tracts both of Sibiria and Ruſſia: no petrifications are to be found here, either of the teſtaceous or cruſtaceous animals; and the veins of ore are always found near the ſurface, never entering deep into the earth. Beſides the mines of gold and ſilver above-mentioned, copper and iron are found in ſeveral places; likewiſe the *Glacies Mariæ*, or Muſcovy Glaſs, is dug near the river Mama. Loadſtones are alſo got in Sibiria; and in ſeveral of the rivers, beautiful tranſparent pebbles and cryſtals occur.

I ſhall only add, that there are ſome natural warm baths in ſeveral parts of Sibiria, and ſome of them of a moſt agreeable temperature; and proceed to the account of our author's obſervations and experiments on the height of the earth, &c.

Pauda is allowed to be the higheſt of all that ridge

ridge of mountains called Werkoturian. Our author endeavoured to take the height of it by means of the barometer.

On the 11th of December 1742, at our author's lodgings at the foot of Pauda, the mercury in the barometer, in a cold place, but within doors, ſtood at $26\frac{83}{100}$ Paris meaſure. He then carried it up the mountain as high as he could go, which was about one-third of the whole height, where he hung up the barometer on a tree, from nine to eleven in the forenoon, making a good fire pretty near it, leſt the intenſe cold, which ſunk the quickſilver in De Liſle's thermometer to 201, ſhould affect the barometer, and lead him to aſcribe that to gravity, which was only owing to the contraction of cold.

Under theſe circumſtances the quickſilver ſunk to $25\frac{32}{100}$.

Hence, according to M. Caſſini's calculation, our author's firſt ſtation will be 941 feet higher than the level of the ſea: the ſecond on Pauda 1,505 feet, and the whole height of this mountain 4,515, or 752 Paris toiſes; which added to 941 feet, the height of his lodgings at the foot of Pauda, makes 5,456 feet, or 909 toiſes, the height of Pauda's top above the ſea; ſuppoſing the level of the ſea to be 28 inches, as the Paris academicians have fixed it: though this differs from obſervations made on the barometer at the ſea-coaſt of Kamtſchatka at Bolcheretz; where, from experiments made above two years, the

mean height of the mercury was 27 inches, $6\frac{1}{2}$ lines. And at Ochotz, during a year's obſervations, the mean height was found to be 27 inches and about $8\frac{1}{2}$ lines.

Hence it would appear, that the ſea of Kamtſchatka is higher, with reſpect to the earth's center, than the Ocean and Mediterranean; and at Bolcheretz higher than at Ochotſki.

The following liſt of barometrical obſervations, made in various parts of Sibiria, will ſhew the different heights of the different tracts in it.

	Feet.	Toiſes.	Inches.
The mean height of the barometer, from a year and 10 months obſervations at Ircuts, was —	——	——	26 $\frac{38}{100}$
Its height above the ſea will then be — — —	1355 or	226	——
At Selengia, 1 month's obſervations — — —	——	——	25 $\frac{85}{100}$
Its height above the ſea —	1779 or	296	——
At Kiachta, a town on the confines of China, 12 days obſervations in April and May, mean height — —	——	——	25 $\frac{35}{100}$
Its height — —	2400 or	400*	——
At Nertſchia, from 20 days obſervations in June — —	——	——	25 $\frac{99}{100}$
The height above the ſea —	1738 or	298	——
At the ſilver mines at Argun, 9 days in July — —	——	——	25 $\frac{62}{100}$
The height above the ſea —	2121 or	$353\frac{1}{2}$	——

* In the copy before me appears to be a great miſtake, either of the printer, or in the manuſcript; it being put down in words at length, *bis mille quadringentarum Orgyarum cum dimidia*; which is impoſſible; and the number of feet is not exact, according to other calculations.

Our author adds ſeveral judicious reflections upon the time and manner of making theſe obſervations, in order to determine any thing with certainty, which he has endeavoured to keep ſtrictly to in theſe experiments; and concludes, that the plains in ſome parts beyond the lake Baical, are almoſt as high as the tops of high mountains in ſome other countries; Mount Maſſane, according to the French geometricians, being but about 408 toiſes high, which differs but little from the plain country at Kiachta; which yet has conſiderable mountains riſing in its neighbourhood.

From whence our author concludes, that the elevation of the earth, in this tract, above the level of the ſea, is very great, compared with the weſt part of Sibiria and Europe*.

The

* M. De la Condamine, in his voyage through the inland part of South America, makes Quito to be between 14 and 1500 toiſes above the level of the ſea.

Suppoſe	1450
He tells us, that Pichincha is 750 higher	750
This makes in the whole, above the level of the ſea	2200 toiſ.

P. Martel, engineer, in his account of the Glacieres in Savoy, printed at London 1742, tells us, that the barometer at Geneva, by the ſide of the Rhone, ſtood at $27\frac{2}{12}$ I. which is 656 feet above the level of the ſea, according to Scheuchzer; and that the higheſt point of Mont Blanc, meaſured partly by the barometer, and where inacceſſible from the ſnow that covers it, by trigonometrical operations, is 12,459

The air of Sibiria, with reſpect to its gravity, is, as in other countries, the nearer the ſea the heavier; and the more remote, the lighter: ſo that at Kiachta, ſcarce one perſon in our author's retinue eſcaped without ſome indiſpoſition. They were ſeized after their arrival, ſome with acute fevers, others complained of extreme laſſitude and dejection. It was in the ſpring ſeaſon, the weather moderate, their manner of living regular, nor had they been much fatigued with their journey; in ſhort, they could attribute it to no other cauſe than the lightneſs of the air.

In theſe provinces, viz. beyond the lake Baical, our author tells us, that intermittents are ſeldom heard of, and ophthalmies are endemic; but that, in the fenny tracts which lie near the Oby and Janiſea, intermitting fevers are very frequent.

The coldneſs of the air of Sibiria is of all others of the moſt remarkable quality. In ſome places it ſnows frequently in September, and not ſeldom in May. In Jacutſk, if the corn is not ready to cut in Auguſt, which often is the caſe, the ſnow ſometimes prevents it, and buries the harveſt all together. At Jacutſk, the Profeſſor

feet, or ſomewhat more than 2,076 toiſes above the level of the Rhone; which, added to the height of this above the ſea, makes 13,115 French feet, or about two Engliſh miles and two-thirds.

ordered

ordered a hole to be dug in the earth, in a high open place, on the 18th of June; the mold was 11 inches deep; below that was ſand about 2½ feet; it then began to feel hard, and in half a foot more it was froze as hard as poſſible. In a lower place, at no great diſtance from this, he ordered another hole to be dug: the ſoil was 10 inches; ſoft ſand 2 feet 4 inches; below this, all was congealed; ſo that the earth is ſcarcely thawed even in ſummer above four feet deep.

Our author inclines to the received opinion, that the eaſtern climates under the ſame latitude are colder than the weſtern; and thinks this is confirmed by experiments made in different parts of Sibiria.

The mercury in De Liſle's thermometer often ſunk in winter in very ſouthern parts of this country, as near Selinga, to near 226, which is equal to 55½ below 0. in Fahrenheit's thermometer. But the cold is often much more intenſe than this, as appears by the following experiments, made at Kirenginſki.

Feb. 10, 1738. At eight in the morning the mercury ſtood at 240 degrees in De Liſle; which is 72 below 0. in Fahrenheit's.

On the 20th it ſunk one degree.

At the ſame place in 1736,

Dec. 11. At three in the afternoon, 254 in De Liſle.

Almoſt 90 below 0. in Fahrenheit.

Dec. 20. Four o'clock, p. m. 263 in De Liſle.

99 $\frac{44}{100}$ below 0. in Fahrenheit.

	D.	F.
Nov. 27. Twelve at noon,	270 =	107 $\frac{73}{100}$ below 0.
Jan. 9. — —	275 =	113 $\frac{65}{100}$.
1735, Jan. 5. Five in the morn.	260.	
Six ———	280 =	120.
Eight ———	250, and roſe by degrees till eleven at night, when it ſtood at 252.	

Such an exceſs of cold could ſcarcely have been ſuppoſed to exiſt, had not experiments, made with the greateſt exactneſs, demonſtrated the reality of it.

During this extreme froſt at Jeniſea, the magpies and ſparrows dropped down as they flew, and to all appearance dead; though they moſtly recovered when brought into a warm room. This was quite new to the inhabitants of that country; though it frequently happens in Germany in much leſs intenſe cold, when the weather ſets in at once very ſevere.

The air, ſays our author, was at that time extremely unpleaſant; it ſeemed as if itſelf was froze, being dark and hazy; and it was ſcarce poſſible even to bear the cold in the door-way for three or four minutes.

Theſe experiments, our author aſſures us, were made with all poſſible exactneſs, and agree with many others, made in different parts of Sibiria by his direction; and from theſe we may conclude, that the cold in Sibiria is more intenſe than it has yet been found to be in any other part of the world.

It was not apprehended that a greater degree of

of cold exiſted any where, than that artificial one produced by Boerhaave, by means of concentrated ſpirit of nitre, which ſunk the mercury 40 degrees below 0. in Fahrenheit's thermometer; which was ſuppoſed to be the point beyond which no animal could bear it.

But the utmoſt limits of cold are yet unknown; or to what degree an animal can ſubſiſt in it, when inured to it by little and little. The hiſtory of heat is alike imperfect. The celebrated Profeſſor above-mentioned was induced to think, that a man could not bear, without the utmoſt danger, a greater heat than that which would raiſe the mercury to 90 in Fahrenheit's; but an ingenious and accurate correſpondent of our author's at Aſtrachan informs him, that it not only riſes there to this degree frequently, but even to 100, and he has ſeen it 103½. Even in the bagnios in Ruſſia, the heat is often equal to 100: it ſometimes makes the quickſilver aſcend to 108, 10, and to 116, as may be tried every day; and yet people not only bear them with impunity a few minutes, but often ſtay half an hour or an hour.

One neceſſary obſervation our author makes, which is, that the ball or tube containing the mercury ought to be as dry as poſſible on the outſide, during theſe or any other trials with the thermometer: for the adhering moiſture, by forming a cooler atmoſphere round it, has ſometimes occaſioned a difference of ten degrees.

Theſe are ſome principal facts given us by our

our author in his preface, relative to the natural hiſtory of Sibiria in general: what follows chiefly regards the work it is prefixed to.

As a juſt idea of this part cannot be exhibited in a narrow compaſs, the curious in this branch of ſcience muſt be referred to the book itſelf.

I have only to acknowledge with gratitude the inſtruction and entertainment I have received from this elaborate work: it is a tribute juſtly due to the learned and ingenious author, in return for the pains he has taken, and the fatigue he has endured in this inhoſpitable region; and to entreat your indulgence, if I have flattered myſelf too much, in apprehending this excerpt might afford you ſome amuſement.

AN

ACCOUNT

OF THE

PUTRID SORE-THROAT.

PREFACE*.

WHEN the following treatiſe was firſt publiſhed in the year 1748, the diſeaſe which is the ſubject of it was not generally known in England, though it had ſpread like a plague through many of the ſouthern parts of Europe about a century before, and had carried off great numbers of people, children eſpecially.

From the time of its firſt appearing in this nation, it has viſited many parts of the kingdom, with different degrees of violence, as different cauſes contributed to render it more or leſs malignant.

It is probable that this kind of Sore-throat may continue amongſt us for the future, breaking out with more or leſs ſeverity, as ſeaſons, ſituations, and other circumſtances, may concur. And,

Though its aſpect has ſometimes varied, according to the epidemic conſtitution, yet upon the whole it has ſeldom, in any place that I have heard of, deviated ſo far from the following deſcription, as to leave it doubtful under what ſpecies of diſeaſe it ought to be ranked.

* The ſixth and laſt edition of this intereſting production was reprinted in 1777; to which, and the preceding edition only, this Preface was prefixed. *Editor.*

Warranted

Warranted by the authority of thoſe Phyſicians who had early and extenſive opportunities of obſerving this diſtemper in Italy, Spain, and other countries, at its firſt breaking out in Europe, as well as by the experience of ſome Phyſicians at home, the late very eminent and learned Dr. Letherland particularly, inſtead of treating it as an inflammatory diſeaſe, which a Sore-throat was generally deemed to be in this country, a warmer regimen was propoſed, and ſuch as is moſt commonly purſued in putrid fevers, and diſorders allied to them.

This method has for the moſt part ſucceeded very happily; and it now ſeems to be the concurrent opinion of the moſt experienced in the faculty, that a generous and cordial regimen is in this ſpecies of Sore-throat the moſt ſalutary.

Amongſt all the ſymptoms which attend this diſeaſe, there is none more formidable than perpetual watchfulneſs, with a delirium. Theſe ſymptoms moſt commonly affect adults, and eſpecially the ſanguine and plethoric.

The throat, in theſe circumſtances, is ſeldom much ulcerated; this part is the leaſt of their complaints: the patients are hot, reſtleſs, and, though delirious, are ſenſible for a moment, and anſwer queſtions put to them, not improperly. The ſkin is covered with a deep eryſipelatous redneſs, and always dry, as they are continually moving about. The pulſe is quick, ſmall, and hard; the urine various, often turbid, yet ſometimes clear and flame-coloured.

In ſuch caſes bleeding ſeems not only allowable, but neceſſary, eſpecially by cupping from the back of the head, or by leeches from the temples; from the arm perhaps it might occaſion too great faintneſs; and a retreat of that eruption, which though no critical diſcharge, but rather a ſymptom of malignity, ought not to be repreſſed.

After bleeding, the Bark, conjoined with alexipharmacs, as the ſimple or compound powder of *Contrayerva*, *Confectio Cardiaca*, or the like, may be exhibited, in quantity and frequency proportioned to the age and ſymptoms.

The uſe of the Bark in the cure of this diſeaſe, was unknown to the early practitioners. It is but of late that this celebrated medicine has been uſed with freedom in this as well as in other putrid diſeaſes, and with great advantage.

The difficulty of prevailing upon children afflicted with this diſtemper to take any kind of medicine, put me early on trying the Bark in clyſters, and ſometimes when there ſeemed very little chance of relieving them by any means. To very young children, two or three drachms of the Bark, in fine powder, have been given every ſix hours, in three or four ounces of broth, as a clyſter, adding a ſmall quantity of the *Elect. è Scordio* to the ſecond or third, if the firſt was diſcharged too ſpeedily; and this has ſaved

many, when not a drop of any medicine, and ſcarcely any kind of nouriſhment, could be ſwallowed.

Adults may take half a drachm of the powder in an ounce and a half of the decoction, warmed with any grateful compound water, every two or three hours; taking particular care to prevent any conſiderable tendency to a diarrhœa, from the uſe of the medicine.

Free, but not cold air, plenty of liquid nutriment and generous, with conſtant attention to keep the patients clean, their mouths and throats often waſhed, and their linen changed, contribute greatly to the cure of this diſeaſe. While their ſkin is covered with that deep efflorescence, if they are at all ſenſible, they often complain of the leaſt admiſſion of cold air, and very frequently of much ſickneſs and oppreſſion, if this efflorescence ſpeedily diſappears.

To favour this eruption, it will always be proper to put thoſe who are ſeized with this diſtemper to bed as early after ſeizure as poſſible, and to give the mild and cordial diaphoretics. And, as a preſervative, I have often recommended the Bark to be given both in decoction and ſubſtance, with the addition of ſuch a quantity of the volatile tincture of *Guaiacum*, as may render it gently purgative.

Though the Faculty and the Public are now ſufficiently convinced of the exiſtence of this diſtemper, and it may ſeem, therefore, needleſs

to

to continue ſo many teſtimonies of it; yet as this recapitulation may ſerve as an index to ſome of the moſt approved authors on the ſubject, it may not be without its uſe to inquiſitive practitioners; and others may eaſily paſs it over to a part in which they are more immediately intereſted, viz. the knowledge and cure of this diſeaſe, as it has appeared, and ſtill continues to appear, in many parts of this nation.

J. F.

Nov. 25, 1769.

PART I.

Of the SORE-THROAT attended with ULCERS;

As it appeared in SPAIN, ITALY, SICILY, &c.

THE diſeaſe which is called, by the Spaniards, *Garrotillo* *; by the Italians, and other nations, *Morbus ſtrangulatorius*, *Peſtilens Faucium Affectus*, *Epidemica Gutturis Lues*, and by divers other appellations †; is ſaid to have appeared firſt in Spain about the year 1610;

* Ab Hiſpanis Garrotillo appellatur, ut eadem patiantur Angina laborantes, quæ facinoroſi homines, cum injecto circa collum fune ſtrangulantur. Epiſt. R. Moreau ad Th. Barth. Epiſt. Med. Cent. i. p. 336.

† Affectus ſuffocatorius, Carbunculus anginoſus, Phlegmone anginoſa, Angina peſtilentialis, Morbus Gulæ, Morbus Puerorum, Peſtilens ac præfocans pueros abſceſſus, Tonſillæ peſtilentes, Ἀγχόνη λοιμώδης, Apthæ malignæ, Paſſio anginoſa, Laqueus gutturis, &c. Vide Corteſ. Miſcel. Med. p. 666. Severin. & Epiſt. Ren. Moreau ad Th. Barthol. de Laryngotomia.

to have ſpread from thence to Malta, Sicily, Otranto, Apulia, Calabria, and the Campagnia, in the ſpace of a few years; and to have broke out at Naples in 1618, where it continued upwards of 20 years ravaging the different parts of that kingdom *.

It is not certainly known how much longer it remained in theſe countries, or to what others it was communicated at that time, its declenſion being as obſcure as the cauſes it ſprung from. That it wholly diſappeared in theſe parts, ſoon after the time above-mentioned, ſeems probable, from the ſilence of thoſe phyſicians, who have publiſhed their obſervations made in the places, which had ſo ſeverely felt the effects of this diſtemper.

Several writers, as Wierus †, Forreſtus ‡, Ramazzini §, and others, take notice of epidemic affections of the throat, in ſome reſpects reſembling the diſeaſe here deſcribed; but a little attention to the ſymptoms of each will, I think, diſcover an eſſential difference between them. The ſame, I think, may be ſaid of the ſore-throat and the ſcarlet fever, which ſhewed itſelf at Edinburgh in 1733 ‖.

* Severin. de recondita abſceſſum natur. p. 446.

† Joh. Wieri Obſervat. lib. vi. de Angina peſtilenti epidemica, Oper. p. 910.

‡ Pet. Forreſt. Obſervat. lib. vi. de Febribus publice graſſantibus, p. m. 150.

§ Bern. Ramazzini Conſtitutiones Epidem. Oper. p. 195, & ſeq.

‖ Medical Eſſays, vol. iii. p. 26.

to Tournefort,

Tournefort, in his voyage to the Levant *, ſeems to have met with this diſeaſe in the iſlands of the Archipelago; at leaſt ſo far as one can judge from the imperfect deſcription we have of it. His account is as follows:

"When we were in this iſland (Milo) there "raged a terrible diſtemper, not uncommon in "the Levant; it carries off children in twice "24 hours: it is a carbuncle or plague-ſore in "the bottom of the throat, attended with a "violent fever. This malady, which may be "called the child's plague, is epidemical, tho' "it ſpares adult people. The beſt way to "check the progreſs of it, is to vomit the child "the moment he is perceived to grow heavy-"headed. This remedy muſt be repeated, ac-"cording as there is occaſion, in order to eva-"cuate a ſort of *aqua fortis* that diſcharges it-"ſelf on the throat. It is neceſſary to ſupport "the circulation of the juices, and the ſtrength "of the patient, with ſpirituous things; ſuch "as the *Theriaca*, *Spir. vol. oleoſ. aromat.* and "the like. The ſolution of liquid ſtyrax in "brandy is an excellent gargariſm upon this "occaſion. Tho' it is a caſe that requires "the greateſt diſpatch, the Levantines are ſel-"dom much in haſte in the cure of any diſ-"eaſe."

This account does not diſagree in general with that which has been left us of the *morbus*

* Tournefort's Voyage to the Levant, vol. i. p. 135.

ſtrangulatorius; only he is ſingular in aſſerting it to ariſe from a kind of *aqua fortis* diſcharged upon the parts; but his favourite ſtudy had engroſſed his attention, and to this we muſt impute both the preſent miſtake, and his want of accuracy and preciſion too frequently, when he treats upon medical ſubjects.

When it firſt broke out in the countries abovementioned, it ſoon engaged the phyſicians of thoſe times, as well to obſerve its nature, effects, and whatever might contribute to its cure, as to vindicate their reſpective ſyſtems and opinions; and out of ſuch of the tracts then publiſhed as I have had an opportunity of peruſing, the following account of it, as it appeared at that time, has been collected.

Ludovicus Mercatus, phyſician to Philip II. and III. Kings of Spain, among his Conſultations, publiſhed in tome V. of his works *, has one upon this diſeaſe †. He mentions it as a calamity which had but newly appeared, and at that time affected ſeveral provinces and cities of that kingdom. He has related only one caſe; but in commenting upon it, according to the method of writing on diſeaſes then in uſe, he takes notice of ſeveral circumſtances relative to it, and makes ſome obſervations reſpecting the cure, which, tho' they ſeem to

* D. Ludovici Mercati, medici a cubiculo Philippi III. Hiſpaniarum Regis, &c. Oper. Tom. 5. Francof. 1614.

† De Faucium et Gutturis anginoſis et lethalibus Ulceribus. Conſultatio xxiv. p. 137.

have

have been neglected by many who ſucceeded him, experience hath ſince ſhewn to be juſt: ſome of theſe will be pointed out in their proper places; and, conſidering that he wrote very ſoon after the diſtemper broke out, the approbation prefixed to this part of his work being dated in 1612, they are a proof of his attention and ſagacity.

Johannes Andreas Sgambatus, a phyſician of Naples, publiſhed a treatiſe upon this ſubject in 1620 *. He gives us a methodical and pretty exact hiſtory of the ſymptoms, and method of cure both general and topical, together with a ſummary view of the diſputes, which were at that time managed with ſufficient heat and acrimony, in relation to its name, cauſe, and nature; about which they were as much divided as they were about the method of cure; each party appealing to Hippocrates, Galen, Avicenna, &c. for the ſupport of their opinions concerning a diſeaſe, which it is not certain that thoſe whom they appeal to ever knew.

Johannes Baptiſta Corteſius, in his *Miſcellanea Medica* †, takes notice of this diſeaſe, and de-

* De peſtilente faucium affectu Neapoli ſæviente, opuſculum, auctore Jo. Andrea Sgambato, philoſopho ac medico Neapolitano, et academico otioſo. Neapoli excudebat Tarquinius Longus, 1620, in 4to.

† Joannis Baptiſtæ Corteſii, medici ac philoſophi, in Meſſanenſi academia praxim ordinariam e prima ſede interpretantis, Miſcellaneorum Medicinalium Decades Denæ. Meſſanæ 1625, in fol.

ſcribes

ſcribes its principal ſymptoms, in a letter to Jo. Anton. Anguilloni, phyſician in chief to the Malteſe gallies. He conſiders it indeed as a different diſtemper from that which infeſted Naples, and other parts of Italy; tho', from his own account of it, there appears little reaſon to queſtion its being the ſame. He ſeems to have been led into this miſtake, by conſidering the diſeaſe he treats of, as contagious only in a certain limited ſenſe, whilſt the Italians, as ſome of the Spaniards had alſo done, declared theirs to be peſtilential and contagious without reſtriction. He allows, that the breath of a perſon affected might convey the contagious effluvia to another near at hand; and gives an inſtance of one who got the diſeaſe, and died of it, by trying, at his friend's requeſt, who then laboured under this diſeaſe, if his breath was affected *;

* Divi Franciſci Cuſtos, vir doctrina et moribus inſignis, hac lue obſeſſus, tonſillas ſolummodo et gargareonem inflammatione læſa habebat, et continuo querebatur ſe percipere in ore fœtorem quendam; et ut hac de re certior redderetur, ad ſe vocavit baccalaureum quendam ſibi amiciſſimum, qui maximo affectu aſſiſtebat, rogavitque ut vellet olfacere, percipereque naribus, an verum eſſet talem fœtorem emittere, an ab ejus imaginatione prodiret: olfecit baccalaureus, me (ſcil. Corteſio) præſente, et multis aliis: at ſtatim non multis elapſis horis decubuit ſola faucium et glandularum inflammatione vexatus, abſque aliqua manifeſta corruptione partium, omnibuſque præſidiis ex arte factis, quarto die ſuffocatus periit; et tamen Cuſtodem non tetigerat, ſed ſolo olfactu aerem ab ore prodeuntem naribus traxerat: quare ab hujuſmodi exemplo veni in ſententiam hunc morbum non eſſe abſque aliqua contagione. Cort. Miſcel. p. 698.

for

for from this circumſtance they gueſſed at the degree of danger attending the ſick.

In 1636, Ætius Cletus, of Signia in Italy, publiſhed his treatiſe *De Morbo ſtrangulatorio* *. He mentions ſome facts relating to it, that had eſcaped Sgambatus and Corteſius, which will be taken notice of hereafter.

Marcus Aurelius Severinus, Profeſſor of Anatomy and Surgery, and phyſician to the Hoſpital of Incurables at Naples, wrote a diſſertation upon this diſeaſe, under the title of *Pædanchone Loimodes, ſeu de peſtilente ac præfocante Pueros Abſceſſu*; and annexed it to the ſecond edition of his book *De recondita Abſceſſuum Natura*, which was printed in 1643 †. From a perſon of his capacity, and furniſhed with the beſt opportunities of ſeeing the diſeaſe in every ſtage and condition, we might reaſonably have expected ſuch obſervations as would enable one to form a juſt idea of this diſtemper; but we meet with little of this kind in his performance. He has indeed mentioned ſome circumſtances relating to its hiſtory, not taken notice of by the other writers I have ſeen, and his method

* De morbo ſtrangulatorio, opus Ætii Cleti Signini, doctoris medici et philoſophi. Romæ 1636, 8vo.

† De recondita abſceſſuum natura, libri 8. Marci Aurelij Severini Tharſienſis, philoſophi et medici, regio in gymnaſio Neapolitano anatomes et chirurgiæ profeſſoris. Editio ſecunda, Francofurti ad Mænam 1643. And again printed with Bartholine's Exercitationes, as a commentary upon it, and Villani's Therapeuta Neapolitanus, ſeu Veni mecum Conſultor. Neapoli 1653.

of cure is different from the reſt; but he refers us to others for an account of the ſymptoms, and contents himſelf with reciting and commenting upon Aretæus's deſcription of the *Ulcera Syriaca*, which he takes for granted to have been the ſame with the diſeaſe at that time infeſting Naples; tho' very probably without ſufficient reaſon.

Petrus Michael de Heredia, phyſician to Philip IV. King of Spain, in his *Diſputationes de Morbis acutis*, treats of this diſeaſe expreſsly in ſeveral chapters under the title of *Angina Maligna*. His hiſtory of the ſymptoms contains ſeveral circumſtances which were not taken notice of by any other writer I have ſeen; ſo that though he was probably among the laſt of the Spaniſh phyſicians who wrote upon this ſubject, yet the diligence of his predeceſſors had not wholly exhauſted it. In the ſecond edition of Heredia's works, which was that I made uſe of *, nothing appears whereby to aſcertain the time exactly when he wrote his account; but as he mentions the *Polyanthea* of De la Parra, which, according to Ren. Moreau in Bartholine's Epiſtles, was printed at Madrid in 1625, it is plain that he muſt have written after this time.

One might juſtly expect ſome curious obſer-

* Petri Michaelis de Heredia Complutenſis—Philippi IV. Hiſpaniarum regis archiatri—Opera medicinalia—Lugduni 1673. fol.

vations upon this diſeaſe, from a perſon ſo well qualified for it as Thomas Bartholine: he was in Italy whilſt it raged there, and, it might be ſuppoſed, would be attentive to the minuteſt circumſtance relating to it, and be inquiſitive enough to know what men of character had ſaid upon it. But the Treatiſe which he wrote upon this diſeaſe, and publiſhed in 1646 *, contains ſo little to the purpoſe, that it is difficult to conceive for what end it was written, unleſs to compliment his maſter Severinus, which he does very liberally †.

* Thomæ Bartholini de Angina Puerorum Campaniæ Siciliæque epidemica exercitationes, Lut. Pariſior. 1646.

† Zacutus Luſitanus alſo mentions this diſeaſe, and relates an unhappy inſtance of its effects in the following terms:

In his partibus (ſcil. faucibus) ex humoris virulenti afluxu gignuntur carbunculoſæ inflammationes, quæ peſtis diræ, aut veneni promptiſſimi inſtar, contagio quodam, pueros et adultos corripiunt; et ſævis maleficentiſſimiſque ſtipatæ ſymptomatis citiſſimam necem inferre ſolent. Malum in Hiſpania non multis abhinc annis frequens, vulgus medicorum Hiſpano ſermone *Garrotillo* nuncupat; de cujus eſſentia, periculo, brevitate, et complicatione uſtivi et ulceroſi tumoris, ac deleteria corruptione, laconice dicam. Hoc fuit preſſus biennis infans, ſanguineus et obeſus. Primo die ex catarrhoſa defluxione in ſuffocationem pene incurrit, difficulter reſpirabat, et lac deglutiebat, et febri acuta affectus, nec plorare poterat. In parte gutturis dextra externa glanduloſus apparuit tumor cum dolore multo. Secunda die intra fauces ulcus viſum eſt ad nigrum vergens, quod putrilago et mollities multa comitabantur; et ab ore fœtor horribilis prodibat, magnum certe corruptionis completæ indicium. Tertio die nullis adjutus auxiliis ſtrangulatus eſt extinctus. De Praxi Medic. Admiranda, *lib.* 1. obſerv. 20.

According

According to the accounts which have been left by theſe Authors, it appears, that the diſeaſe which they deſcribe was extremely malignant, and moſt particularly fatal to children, though adults, if they were much converſant about the ſick, were very often ſeized with it; yet more of theſe recovered in proportion than of children; and it was obſerved, that more boys got well through the diſeaſe than girls: ſome thought, that ſuch of this ſex as had black eyes ſuffered more from it than others.

As it was ſometimes obſerved to carry off whole families together, and to ſpread to thoſe places firſt, between which, and the countries affected by it, the communication was moſt frequent; and alſo that children, ſent away from the towns where it raged, in order to avoid it, eſcaped whilſt they were kept at a diſtance, but had it on their return, if the diſeaſe was not extinguiſhed; it was almoſt univerſally allowed to be contagious *.

Thoſe who were ſeized with it, firſt complained of a pain or ſoreneſs in the throat, with a ſtiffneſs of the neck, an uneaſineſs on moving it, as if a cord was twiſted about it, a difficulty in ſwallowing, and frequently in breathing alſo, with a diſagreeable fetid ſmell and taſte. On inſpection, the *Uvula*, the *Tonſils*, *Pharynx*, and the whole *Fauces*, appeared of a remarkably florid red colour, like that attending

* Quod ad contagium attinet, hoc communi omnium conſenſu atque experimento evincitur. Severin. p. 442.

an

an *Eryſipelas:* this colour was not uniformly intenſe, but ſome parts ſeemed to be of a deeper dye than others. The parts above-mentioned were ſwelled more or leſs, though not always ſo much as to affect reſpiration, as in a common *Angina.*

If the attack was violent, they had an extreme difficulty in breathing, and alſo in ſwallowing, with a kind of compreſſive pain and ſtraitneſs of the breaſt and back, a redneſs of the whole face and neck, great heat of all the parts affected, the voice much injured, an unquenchable thirſt, and the patient ſeemingly in danger of being choaked *. In ſome, the ſwelling and ulcers of the *fauces* were apparent upon looking into the mouth; in others, nothing could be ſeen, but a moſt offenſive putrid ſmell was perceivable. A fever came on with the other ſymptoms, and was frequently accompanied with ſmall pimples and eruptions like flea-bites. In very bad caſes, this fever, which Mercatus calls a moſt malignant one †, did not always diſcover its violence or malignity at

* ——— difficultas reſpirandi, et non raro deglutiendi, cum pectoris et dorſi dolore ac veluti compreſſione ſuffocante, ſimul cum peſtilente odore, et vehementi harum omnium partium ardore, et rubore totius oris et colli, cum vocis et loquelæ vitio, ac linguæ extractione, et ſiti incompeſcibili. Mercat. Conſult. p. 136.

† Maxime ob maligniſſimam febrem, quam plerumque ſibi adjunctam habet, &c. Conſult. p. 136.

firſt;

firſt; but it was not the leſs formidable on this account *.

On the ſame day, or the day following, ſuch parts of the *fauces* as at firſt ſeemed to be of a deeper colour than the reſt, turned white, aſh-coloured, or black: this was not occaſioned by any cruſt or matter ſuperinduced upon the parts, but proceeded from a gangrenous colliquation of them, the ſubſtance itſelf being mortified.

The voice was hoarſe and obſcure, not as in a common cold, but as it is in thoſe people who have venereal ulcers in the throat: ſo that, from this affection of the voice alone, ſome were able to gueſs at the diſeaſe †.

The neck and throat ſoon after began to ſwell externally; the tumour was of a ſoft œdematous kind, and increaſed in magnitude as the diſeaſe advanced. All the ſymptoms were aggravated during the night. If the patients had any interval of quiet, it was commonly in the day-time ‡. About the fourth day this tumour was generally grown very large, and the white places in the *fauces* began to turn black; a putrid corroſive ſanies was diſcharged by the

* — nec multum fidere oportet, ſi febris mox non apparuit aut ſuccreſcat, nam ſæpe citius ſuffocat affectio, quam cauſa ſuccendatur; ac non raro malignitas humoris corrumpit ſpiritus et mortem accelerat, ſine eo quod febris ſuccendatur. Mercat. Conſult. p. 137.

† Severin. p. 442.

‡ Sgambat.

mouth

mouth and noſtrils *; the breath grew extremely offenſive; reſpiration, if hitherto not much affected, now became difficult, and the patient expired in a very ſhort time.

Though this was the common progreſs of the diſeaſe, where it terminated unhappily, yet it often varied from this type, and was attended with very different ſymptoms. Some had an extreme difficulty of breathing almoſt from the firſt; ſome had a violent cough; ſome were comatous; others had a delirium; ſome died in a lethargic ſtupor; others bled to death at the noſe; whilſt others again had none of theſe ſymptoms, but were carried off ſuddenly by an inſtantaneous ſuffocation. The *æſophagus* in ſome was ſphacelated down to the ſtomach; the *aſpera arteria*, in others, to the lungs. As theſe could only breathe in an erect poſition; ſo thoſe could ſwallow nothing when the parts were ſo affected. The noſtrils diſcharged a fetid ichor, ſometimes mixed with blood; and ſometimes blood alone, without mixture. This bleeding at the noſe ſeemed at firſt, in one caſe,

* Quibus etiam accedit ſublimis reſpiratio et alta ac ſpirituum revulſio, cum maxima pinnarum naſi diſtenſione.—Saniei per os et nares excretio, variis ulcerum coloribus et intenſiſſimo fœtore nauſeam plerumque movente cum ſordida excretione. In aliquibus vero extra, prope cervicem, et infra mentum glandulæ apparent, peſtiferi morbi naturam redolentes, et univerſa cervix, et collum intumeſcunt, et fauces cum robore ſaturato, inſtar laqueo ſuffocatorum. Merc. Conſult. p. 136.

to give relief; but the patient ſoon after died *. Mercatus relates an inſtance of a child that had the diſeaſe, in which the acrimony of the humour diſcharged from the ulcers was ſo great as to inflame the nurſe's breaſt, and brought on a mortification. He alſo tells us, that the father of the child whoſe caſe is deſcribed above, having frequently put his finger in the child's mouth, to draw out the viſcid phlegm, had his finger inflamed, and was ſeized with the ſame diſtemper †.

Theſe were the ſymptoms in general, and they judged of the event by the mildneſs of their progreſs, or the contrary: though it was agreed, that nothing could be more fallacious than this diſeaſe; and that the moſt experienced were often deceived in their prognoſtic.

If the redneſs of the *fauces* above deſcribed, which appeared at firſt being ſeized, was ſucceeded by an ulceration, without any of that whiteneſs (which for the future I ſhall call ſloughs), if the ſwelling about the neck and

* Severin. p. 440.

† —— erat quidem dira humoris conditio adeo pernicioſa, efficax et contagioſa, quod digitum patris indicem, quo extrahebat eum ſuccum ab ore filii, mordicaret, et in ruborem moveret cum dolore: tandem mox pater conquerebatur de difficultate reſpirandi et deglutiendi cum dolore et tumore faucium, ac faturato colore, et glandulis extra apparentibus juxta mentum. Ex quibus ſecundo die halitum prave olentem expirabat; ita ut jure optimo poſſis colligere, contagio filii patrem fuiſſe affectum. Mercat. Conſ. p. 139.

throat

throat was not large, if the patient diſcharged by the mouth conſiderable quantities of thin pituitous matter, if the breath was not fœtid, and the patient had no diſguſt to his food, if the eyes retained their proper luſtre, all was judged to be ſecure.

On the other hand, if the luſtre of the eyes was conſiderably faded*, if the external œdematous tumour was very large, if the breath ſtunk, if the *fauces* were livid or black, with a coma or delirium, if with theſe the patient had an averſion to his nouriſhment, and his breathing became difficult or laborious, the danger was judged to be extreme.

It was not obſerved that the diſeaſe had any ſtated criſis; or that the ſigns of recovery, or death, appeared on any certain day. Some died on the firſt, others on the ſecond, third, and on every day, to the ſeventh; though the greateſt part died before the fourth†. Thoſe who ſurvived the fourteenth were thought to be out of danger, at leaſt from the diſeaſe itſelf‡; though ſome dropped off unexpectedly, after a much longer reprieve‖.

The

* Hoc unum ſalutis eſt indicium vel interitus: dum oculorum nitor adſervatur, ſalutis ſpes ſemper adeſt; quo tempore hic deperiit, in propinquo mors eſt. Ætii Cleti Op.

† —— indies magis ac magis hæc accidentia creſcunt, donec breviſſimo tempore laborantium majorem partem perimat, idque non raro intra quartum diem. Merc. p. 137.

‡ Ætii Cleti Op. de Morbo ſtrangulatorio.

‖ Quinimo poſt xxx dies, et xl. jam prærepti morbi furo-

 ribus,

The conſequences of this diſeaſe were often felt a long time after it had ceaſed. An exceſſive languor and weakneſs continued for many months; and the voice or deglutition was frequently affected, ſo as to be perceivable in ſome almoſt a year after *.

It was however obſerved, that notwithſtanding the diſeaſe moſt frequently was accompanied with ſymptoms of peſtilential malignity, yet it ſometimes appeared with a much more favourable aſpect; its progreſs not being ſo quick, nor its ſymptoms ſo violent and dangerous, as hath here been deſcribed to be the caſe in general †. At its firſt breaking out in any place, it was commonly the moſt ſevere; it then ſpared no age or ſex, but ſwept off adults together with infants ‡. By degrees it became leſs violent, and at length either wholly diſappeared, or was of ſo little conſequence as to be diſregarded.

We are directed, by moſt of the authors I have ſeen, to begin the cure of this diſtemper, whenever we are called in time, with evacuations, the chief whereof are bleeding and purging: which of the two ought to precede, was not a little diſputed; but it was on all hands

ribus, præter omnium opinionem ex improviſo ſunt extincti. Adeo ſcil. latitans et recondita veneni vis eſt. Severin. p. 440.

* Æt. Clet.

† Severin.

‡ — ut peſtis more in citiſſimam mortem pueros et adultos deducat. Merc. Conſult. p. 135.

agreed,

agreed, that unleſs theſe remedies were very early applied, as they were principally uſeful by way of revulſion, they were not only of no advantage to the patient, but highly injurious *. Obſervations of this kind, we are told †, induced ſeveral phyſicians to omit bleeding entirely; and it was, probably, the reaſon why thoſe who were friends to veneſection ordered it more ſparingly in this, than in moſt other acute diſeaſes ‡. Severinus,

* —— diſputare cœpimus de ſanguine extrahendo: "ſiquidem non defuerunt medici, qui id renuerunt:" cæterum unanimi conſulentium conſenſu, primo die ſanguinem miſimus, cruribus ſcarificatis, et mox octava noctis hora brachiis, aut ſi ultra duos annos fuerit natus, ex vena brachii: "in hoc malo plurimum vereri oportet, vires plurimum de-"jicere." Mercat.

Breviſſime ſecandam eſſe venam in hoc confitentur omnes. P. Mich. de Heredia de Morb. acut. p. 101.

† Circa quod præſidium (venæſectionem) in pueris exequendum, conſulo ne differatur, quia ejus occaſio ſolum eſt, antequam fluxio in partibus contenta ad putredinem commigret. Nam tunc temporis, ſi ſanguinem fuderis, ſummopere lædes, quæ cauſa fuit quod multi medicorum, viſo hoc damno, renuerint ſanguinem mittere. Mercat. Conſult. p. 138.

‡ In hoc ſacro igne non mittendus eſt ſanguis in ea quantitate ac in angina exquiſita.—Placuit quibuſdam in hoc morbo ſecare venas ſub lingua; alii admoverunt hirudines collo; mihi nulla iſtarum evacuationum unquam probari potuit. Nam cum tumor ſuperveniens ex ſanguine non oritur, fruſtra adhibentur ea auxilia quæ ad ſanguinem ex parte affecta evacuandum excogitata fuerunt. Sgambat. de Peſt. Faucium Affect.

Eſſe vero efficiendas parcas miſſiones in quantitate, dum revellere intendimus, docuit antiquitas.—Quod præceptum

verinus, who was by no means a timid operator, orders from four to eight ounces to be taken away; which, conſidering the common practice in thoſe countries, is a very ſmall quantity *.

Some not only gave the precedence to purging, but imagined it alone was ſufficient; alledging as a reaſon for it, that ſome children have recovered where this evacuation only had been employed; whilſt bleeding had been injurious, by leſſening the ſtrength †. Purging was however commonly allowed the ſecond place by thoſe who were advocates for bleeding, but under the like reſtrictions ‡. They generally made uſe of manna, rhubarb, ſenna, tamarinds, ſyrup of roſes, and the like, for this purpoſe. But it was always inculcated, that, in directing theſe evacuations, the patient's ſtrength was eſpecially to be regarded; ſince whatever diminiſhed this, in the end was undoubtedly prejudicial ‖.

magis obſervandum in morbo præſenti, in quo nimis timemus virium jacturam. Copioſa enim ſanguinis miſſio, præterquam quod minus proprie revellit, dejecit vires. P. M. de Heredia, ubi ſupra.

* Severin. ubi ſupra.

† — hoc ſolo præſidio aliquando viſum fuit, pueris ad integram ſanitatem recuperandam ſufficere, ſicut aliis ſanguine detracto, vires plurimum fuiſſe dejectas. Merc. Conſ. p. 138.

‡ Quod evacuandum morbus expoſcit, evacuetur breviſſime. Idem, p. 102.

‖ — in morbis malignis breviter deſtruentibus vires, at poſcentibus ſimul robur animalis virtutis ad ſui ſanationem, multum evacuare non licet. Heredia, p. 102.

Severinus

Severinus orders an antimonial vomit to be given at the firſt attack, and a cooling gently aſtringent gargle to be uſed night and day. He then orders a clyſter, takes away ſome blood from the jugular, and gives from fifteen to twenty-one grains of bezoar mineral twice a day, or oftener, as occaſion requires, with thin diluting liquors, in order to raiſe and promote a moderate ſweat. He gives five or ſix grains of the ſame medicine to children at the breaſt, and commends it highly. He ſcarifies the diſcoloured parts in the *fauces*, in order to let out the corroſive virus; a practice which, though it was recommended by the Spaniards *, was diſliked by ſome of the moſt eminent Italians †.

Cupping, with ſcarification, was univerſally approved, and commonly practiſed. Leeches were alſo applied, by way of revulſion, to different parts.

Conſiderable benefit was expected from ligatures made on the extremities, and from chafing the limbs with the hand, or a cloth; alſo from cupping without ſcarification; apprehending that a revulſion from the parts affected was by this means procured; and that ſome portion of the morbific matter was carried off by the pores of the ſkin.

* Si vero malum non miteſcat, ſed gravius affligat partem, quod conſtabit ex lucido aut nigro colore, vel ex nimia mollitudine—cum intolerabili fœtore, ſcarificabitur profunde, prout partis natura tulerit. Heredia, p. 105.

† Cort. Miſcel. p. 697.

Some of the Spaniſh phyſicians recommended veſicatories of cantharides, and other acrid or cauſtic ſubſtances, to be laid on each ſide of the neck; but they had not the ſame opinion of their uſefulneſs, when applied to the back or ſhoulders. Heredia expreſsly tells us, that he had ſeldom found any benefit from them *. Neither do the Italian phyſicians ſeem to have been fond of them; the progreſs of the diſeaſe was, in their opinion, too ſwift to admit of any relief from either cauſtics or veſicatories †, both of which had been made uſe of in Spain ‡.

To moderate the continual and malignant fever which accompanied this diſeaſe from the firſt, and which was thought by ſome to be only ſymptomatical, and had therefore the laſt place in their conſideration ‖, they had recourſe to ſuch internal medicines as were deemed cordial and alexipharmac. Armenian bole, bezoar both animal and mineral, and, according to the philoſophy of thoſe times, the precious ſtones were reckoned of this claſs. Of vegetable products, the juices of citrons, lemons, oranges, pomegranates, and ſorrel; vinegar, the juice and decoctions of borage, bugloſs, *Carduus Benedictus*, endive, ſcabious, ſcorzonera, ſcordium, with many

* Multi etiam veſicatoria conſulunt ſpatulis applicata.—Quod auxilium parum prodeſſe ſemper vidi. Heredia, p. 108.

† Sgambat.

‡ Heredia, ubi ſupra.

‖ Febris etiam continua ſtatim in initio apparet, ſymptomatica quidem. Heredia, p. 97.

others of the like nature, were recommended. But a decoction of the contrayerva root was in the higheſt eſteem in this diſeaſe, both as an alexipharmac in general, and for its peculiar efficacy, when applied as a gargle; to which Mercatus, from his own repeated obſervations, gives a very ample teſtimony *.

But as they found from experience, that no regular criſis or concoction of the humours was to be waited for; that no evacuations, except by way of revulſion, after the acceſs, were of uſe †, they began to conſider the diſeaſe as local, as a particular ‡ morbid affection of the *fauces*, and applied themſelves chiefly to topics, without laying much ſtreſs on internals.

In this part of their directions they have therefore been more explicit; and ſome of them, in order to point out their applications with more propriety, have divided the courſe of this diſeaſe into four different periods ‖.

The firſt they called the ſtate of inflammation. In this, mild repellents were thought neceſſary;

* Hoc unum obſervantiſſimum habeo, nimirum omnes oris et gutturis collutiones efficere ſupra decoctum ejus celeberrimi medicamenti, quod medici Hiſpani Contrayerva nuncupant, maxime ſi mucoſa et viſcida pituita abundaverit. Mercat. Conſult. p. 138.

† — Experimento monſtratur, quamcunque evacuationem per alvum, aut ſudorem inutilem eſſe et nocivam, quia cum non profit, neceſſario debilitat. Hered. p. 100.

‡ Corteſ. Miſcel. p. 703.

‖ Sgambat. de Affectu Faucium peſtilente.

ſuch

ſuch as vinegar in barley-water, juice of the pomegranate, ſyrup of roſes, mulberries, purſlain, or a decoction of barley, red roſes, liquorice, and plantain; to two pounds of which were added *acet. roſar.* ℥jſs. *ſyr. Diamor.* ℥j. *M**. If it was required yet more repellent, a ſmall quantity of allum was added.

The ſecond ſtage is that wherein the white ſloughs begin to appear, which is a ſtep towards a gangrenous colliquation. In this they ordered mild abſtergents and antiputreſcents; ſuch as a decoction of lupins, beans, vetches, with honey of roſes †.

The third is, when the ulcers appear foul and ſordid, and begin to look black, a real mortification being come on, ſometimes penetrating to a conſiderable depth, with great putrefaction. More powerful aſtringents and exſiccants were requiſite in this caſe; ſuch as powder of myrrh, and a little allum mixed with honey, or honey of roſes; bole diſſolved in treacle-water; a ſolution of *unguent. Ægyptiacum* in barley-water was alſo much in uſe ‡. Allum, ſulphur, copperas, verdigreaſe, oil of vitriol, oil of ſulphur, ſpirit of ſalt alone, or mixed, or diluted in different liquors, were much employed. In this caſe,

* Heredia, p. 105.

† Idem, ibid.

‡ Celebris utiliſſimaque eſt unguenti Ægyptiaci lotura: ſumuntur quidem ℥ij. et infunduntur in ℥ij. aquæ hordei, plantaginis, vel ſeri lactis: poſt infuſionem percolatur per linteum, et colatura tangitus ulcus. Idem, ibid.

ſometimes the acid ſpirits were dexterouſly applied to the parts affected, by means of an armed probe; but they were oftener diluted with ſyrup or honey of roſes, and in children poured into the mouth.

Though many had recourſe to theſe powerful remedies, and even to arſenic itſelf, yet the moſt experienced were juſtly afraid, that the uſe of ſuch cauſtic and acrimonious applications was often attended with pernicious conſequences, both to children and adults; and they are therefore, with good reaſon, condemned by Mercatus *.

Nevertheleſs ſome went ſo far as to adviſe the actual cautery, if the potential ones did not ſucceed, and gave directions for the time and manner of their application †; but as this operation will be liable to all the objections made to the former, to have mentioned it will, I imagine, be thought ſufficient.

Though the author laſt quoted adviſes us to ſcarify the black or livid cruſts or ſloughs, yet he gives us a caution not to tear them off, or forcibly to ſeparate them, as the conſequences would be an increaſe of pain and inflammation;

* Ego quidem arbitror, plures pueros interfeciſſe uſum horum medicamentorum, quæ cauſtica ſunt, quam affectionem ipſam. Merc. Conſult. p. 139.

— compertum habuimus in hoc viro, et aliis laborantibus, hæc cauſtica inflammationi et ulceri ſummopere eſſe nocua: ſuppurantia corruptioni. Id. p. 40.

† Heredia, p. 106.

whence

whence the ulcers would ſpread, and at the ſame time eat deeper *.

In the fourth ſtage the putrefaction is ſuppoſed to be extinguiſhed, the mortified parts caſt off, and an ulcer only remains. In this caſe, the fume of white amber thrown on live coals, and received into the mouth, as a *ſuffitus*, was adviſed; alſo the *vinum myrrhites*, a decoction of guaiacum, roſes, balauſtines, pomegranate-peels, by way of gargle; medicines that were ſuppoſed to dry with ſome degree of aſtringency.

Such was the appearance of the *Angina maligna*, or ulcerated ſore-throat, at its firſt being taken notice of in Europe; and ſuch were the methods of treating it then in uſe. In this recital I have been the more prolix, inaſmuch as the diſeaſe deſcribed in the following pages, is the ſame with the *Angina maligna* of theſe writers, with whoſe experience and obſervations it may doubtleſs be of uſe to us to be acquainted.

* Heredia, p. 109.

PART

PART II.

Of the SORE-THROAT attended with ULCERS;

As it has appeared in THIS CITY, and Parts adjacent.

ACCORDING to the information I have received from ſeveral eminent perſons of the Faculty, it was in the year 1739, that a diſeaſe was firſt taken notice of, which was thought to be the *Morbus ſtrangulatorius*, already deſcribed, and which differed in no eſſential circumſtance, as far as I can learn, from the diſtemper which is the ſubject of this treatiſe.

The ſudden death of two children in a family of diſtinction, and of ſome others near the ſame part of the town, whoſe complaints had chiefly been of a Sore-throat, ſeem to have occaſioned this ſuſpicion: but as very few caſes of the like nature occurred after theſe, or, if they happened, paſſed unobſerved, little mention was made of it during ſeveral years.

It

It began however to ſhew itſelf again in 1742, but not in ſo general a way as to render it the ſubject of much public diſcourſe; for though ſuch of the Faculty as were in the moſt extenſive practice met with it now and then, in the City eſpecially, it remained unknown to the greateſt part of practitioners, till within theſe two or three years, in which time its appearance has been more frequent, both in town and the villages adjacent.

I am informed, that in the winter of 1746, ſo many children died, at Bromley, near Bow, in Middleſex, of a diſeaſe that ſeemed to yield to no remedies or applications, that ſeveral of the inhabitants were greatly alarmed by it; ſome loſing the greater part of their children, after a few days indiſpoſition. Some others of the neighbouring places were affected at the ſame time with the like diſeaſe; which, from all the accounts I have met with from thoſe who attended the ſick, was that here treated of. I am informed likewiſe, that it raged at Greenwich about the ſame time *. It ſtill continues in this

* The Reader may be pleaſed to take notice, that the facts contained in the following narrative, where the contrary is not expreſsly mentioned, have all come under the Author's obſervation, who has endeavoured to relate what he has ſeen, and in ſuch a manner as he thought would beſt contribute to public advantage. It may alſo be neceſſary to obſerve, that the diſeaſe is deſcribed as it appeared in 1747 and 1748, that if the ſymptoms ſhould hereafter vary in any circumſtance, the diverſity may be attributed to the nature of the diſtemper, and not imputed to deſign or inattention.

City,

City, and ſometimes ſhews itſelf in the villages about it, though at preſent with ſo mild an aſpect as ſeldom to prove fatal; unleſs the ſubject is very unfavourable, or the diſeaſe hath been neglected, or improperly treated at the beginning; which circumſtances, though of ſome importance in all caſes, yet are of the utmoſt in this; as a wrong ſtep at the firſt may put it out of the power of art to afford relief.

Though this diſeaſe has now been amongſt us ſeveral years, and has conſequently ſurvived the different ſeaſons, and all the variety of weather to which we are expoſed, yet it ſeems to ſhew itſelf moſt frequently in autumn, and the beginning of winter; at leaſt I have met with many more caſes from September to December incluſive, than in all the other months together.

It may likewiſe be remarked, that the ſummers of 1747 and 1748 were dry, with ſome days in each uncommonly hot, for this climate; the mercury in Fahrenheit's thermometer riſing in the ſhade, and within doors, one day to 78, and during ſeveral to 75 and 6. The autumns of the ſame years were as unuſually temperate and warm; the wind continuing longer in the ſoutherly points than has often been known at this ſeaſon.

In this country, as well as in thoſe where the *Angina maligna* was firſt taken notice of, children and young people are more expoſed to it than adults: a greater number of girls have it than boys; more women than men; and the infirm

of

of either ſex are more liable to have the diſeaſe, and to ſuffer from it, than the healthy and vigorous: I have ſeen but few adults of this conſtitution affected by it, and not one who died of it.

When it breaks out in a family, all the children are commonly affected with it, if the healthy are not kept apart from the ſick; and ſuch adults as are frequently with them, and receive their breath near at hand, ſeldom eſcape ſome degree of the ſame diſeaſe.

It generally comes on with ſuch a giddineſs of the head as commonly precedes fainting, and a chilneſs or ſhivering like that of an ague-fit: this is ſoon followed by great heat; and theſe interchangeably ſucceed each other during ſome hours, till at length the heat becomes conſtant and intenſe. The patient then complains of an acute pain in the head, of heat and ſoreneſs, rather than pain, in the throat, ſtiffneſs of the neck, commonly of great ſickneſs, with vomiting, or purging, or both *. The face ſoon after looks red and ſwelled, the eyes in-

* The vomiting and purging were but ſeldom obſerved to accompany this diſeaſe, at its firſt appearance amongſt us, as I have been informed by ſome phyſicians of eminence, who ſaw it early; but it is generally agreed, that theſe ſymptoms almoſt conſtantly attended, in the manner here deſcribed, during the years 1747 and 1748, the time in which theſe obſervations were collected: and I have ſince found, that the above-mentioned ſymptoms have not ſo regularly appeared as at that time.

flamed

flamed and watery, as in the meaſles; with reſtleſſneſs, anxiety, and faintneſs.

This diſeaſe frequently ſeizes the patient in the fore part of the day: as night approaches, the heat and reſtleſſneſs increaſe, and continue till towards morning; when, after a ſhort diſturbed ſlumber (the only repoſe they often have during ſeveral nights) a ſweat breaks out; which mitigates the heat and reſtleſſneſs, and gives the diſeaſe ſometimes the appearance of an intermittent.

If the mouth and throat be examined ſoon after the firſt attack, the *uvula* and *tonſils* appear ſwelled; and theſe parts, together with the *velum pendulum palati*, the cheeks on each ſide near the entrance into the *fauces*, and as much of them, and the *pharynx* behind, as can be ſeen, appear of a florid red colour. This colour is commonly moſt obſervable on the poſterior edge of the palate, in the angles above the *tonſils*, and upon the *tonſils* themſelves. Inſtead of this redneſs, a broad ſpot or patch, of an irregular figure, and of a pale white colour, is ſometimes to be ſeen, ſurrounded with a florid red; which whiteneſs commonly appears like that of the gums immediately after having been preſſed with the finger, or as if matter ready to be diſcharged was contained underneath.

Generally on the ſecond day of the diſeaſe, the face, neck, breaſt, and hands, to the fingers ends, are become of a deep eryſipelatous colour, with a ſenſible tumefaction; the fingers

are frequently tinged in ſo remarkable a manner, that, from ſeeing them only, it has not been difficult to gueſs at the diſeaſe.

A great number of ſmall pimples, of a colour diſtinguiſhably more intenſe than that which ſurrounds them, appear on the arms, and other parts. They are larger, and more prominent in thoſe ſubjects, and in thoſe parts of the ſame ſubject, where the redneſs is leaſt intenſe; which is generally on the arms, the breaſt, and lower extremities *.

As the ſkin acquires this colour, the ſickneſs commonly goes off, the vomiting and purging ceaſe of themſelves, and rarely continue after the firſt day.

The appearance in the *fauces* continues to be the ſame, except that the white places become more aſh-coloured; and it is now diſcoverable, that what at firſt might have been taken for the ſuperficial covering of a ſuppurated tumour, is really a ſlough, concealing an ulcer of the ſame dimenſions.

All the parts of the *fauces* above-mentioned are liable to theſe ulcerations; but they generally are firſt diſcernible in the angles above the *tonſils*, or on the *tonſils* themſelves; though

* The redneſs and eruption have not accompanied this diſeaſe ſo regularly, during the latter part of this winter †, as they did in the preceding ſeaſons: in ſome caſes they did not appear at all; in others, not till the third or fourth day; and, as I have heard, in ſome not till the fifth, and even later.

† 1754.

they

they are often to be ſeen in the arch formed by the *uvula* and one of the *tonſils*; and alſo on the *pharynx* behind, on the inſide of the cheeks, and the baſe of the tongue, which they cover in the manner of a thick fur. Inſtead of theſe ſloughs, where the diſorder is mild, a ſuperficial ulcer, of an irregular figure, appears in one or more of theſe parts, ſcarce to be diſtinguiſhed from the ſound, but by the inequality of ſurface it occaſions.

The parotid glands * on each ſide commonly ſwell, grow hard, and are painful to the touch: if the diſeaſe is violent, the neck and throat are ſurrounded with a large œdematous tumour, ſometimes extending itſelf to the breaſt; which, by ſtraitening the *fauces*, increaſes the danger.

Towards night, the heat and reſtleſſneſs increaſe, and a *delirium* frequently comes on. This ſympton, which appears in ſome even on the firſt night, ſeems to differ conſiderably from the like affection in other diſeaſes. The ſick commonly anſwer the queſtions put to them properly, but with an unuſual quickneſs; they talk to themſelves incoherently when left alone, and frequently betray the firſt tendency to this diſorder, by affecting too great a compoſure: this, for the moſt part, happens to thoſe who

* Heredia takes notice of the ſame ſymptoms, and aſſigns a very probable reaſon for it.—In Angina maligna non tument externa, quia in illas ex externis tranſlata materia fuerit, ſed quia ita adimplentur interna, ut materiam fluentem non capiant, et ſic ad externa dilabitur. Heredia, p. 99.

ſleep but little; for ſome are comatous and ſtupid, and take little notice of any thing that paſſes.

In this manner they continue during two, three, or more days: they commonly grow hot and reſtleſs towards the evening; which ſymptoms, and the *delirium*, increaſe as night comes on: a ſweat more or leſs profuſe breaks out towards morning; and from this time they are eaſier during ſome hours, a faintneſs only continuing, of which they frequently complain more than of the reſt of their ſufferings.

The diſeaſe ſeems to have no ſtated period which can properly be called its Ἀκμή, or height. Some grow eaſier from the firſt day of the attack; but, in general, the ſymptoms of recovery appear on the third, fourth, or fifth day, and proceed in the following manner:

Firſt, The redneſs of the ſkin diſappears; the heat grows leſs; the pulſe, which was hitherto very quick, becomes ſlower; the external ſwellings of the neck ſubſide *; the ſloughs in the *fauces* caſt off; the ulcerations fill up; the patient ſleeps without confuſion, is compoſed when awake, and his appetite begins to return.

The pulſe, during the whole courſe of this diſeaſe, is generally very quick; frequently 120 ſtrokes, or more, in a minute: in ſome, it is

* At leaſt, of all the parts about the neck, except the parotids themſelves; which ſometimes continue ſwelled and hard a long time after the other ſymptoms abate, and at length ſuppurate.

hard

hard and ſmall; in others ſoft and full, but without that ſtrength and firmneſs which uſually accompany equal quickneſs and heat, in genuine inflammatory diſorders.

If a vein be opened ſoon after the diſtemper is come on, the blood generally appears of a freſh florid red; the *craſſamentum* is rather of a lax gelatinous texture, than denſe or compact; the *ſerum* yellow, and in a large proportion *.

The urine is at firſt crude, and of a pale whey-colour: as the diſeaſe advances, it turns yellower, as if the bile was diluted in it; and, ſoon after the patient ſhews any marks of recovery, it commonly grows turbid, and depoſits a farinaceous ſediment.

They ſeldom have any ſtools, if the ſymptoms are favourable, from the time when the purging, which generally attends the acceſſion, ceaſes. This diſcharge is frequently bilious, and without any pain: though theſe evacuations differ in different habits.

They complain of thirſt commonly leſs in this than in other acute diſeaſes. The tongue is generally moiſt, and not often furred: in ſome nevertheleſs it is covered with a thick white coat or fur, and theſe generally complain of ſoreneſs about the root of the tongue.

The *uvula* and *tonſils* are ſometimes ſo much

* But it is often fizy when the diſeaſe has continued two or three days; and in ſome inſtances which lately occurred, it was ſo ſoon after the firſt attack.

ſwelled, as to leave but a very narrow entrance into the gullet, and this entrance frequently ſurrounded with ulcers or ſloughs; yet the patients often ſwallow with leſs difficulty and pain than might be expected under ſuch circumſtances *.

They frequently complain, ſoon after they are taken ill, of an offenſive putrid ſmell affecting their throats and noſtrils, which oft occaſions ſickneſs before any ulcerations appear.

In thoſe who have this diſeaſe in a ſevere manner, the inſide of the noſtrils, as high up as can be ſeen, frequently appears of a deep red, or almoſt livid colour: after a day or two, a thin corroſive *ſanies*, or with it a white putrid matter of a thicker conſiſtence, flows from them, which is ſo acrid, as to excoriate the part it lies upon any conſiderable time. This is moſt obſervable in children, or in young and very tender ſubjects, whoſe lips likewiſe are frequently of the colour above-mentioned, and covered on the inſide with veſicles containing a thin *ichor*, which excoriates the angles of their mouths, and the cheeks where it touches them.

It is probable, that part of the ſame acrid matter paſſes with the nouriſhment into the ſtomach; eſpecially in children; and it is perhaps owing to this cauſe in part, that they ſuffer much more from the diſtemper than adults;

* I have ſeen many caſes, where theſe glands were ſo enlarged, as to force back through the noſtrils moſt part of what was attempted to be ſwallowed.

this

this corroſive fluid, without doubt, producing the ſame effects on the ſtomach and bowels, as it does when applied to the much leſs ſenſible ſkin of the face; *i. e.* it excoriates the parts it touches; which, in fact, ſeems to be the caſe: for, if they get over this ſtage of the diſorder, a purging ſometimes ſucceeds, attended with the ſymptoms of ulcerations in the bowels; and after enduring great pain and miſery, perhaps ſome weeks, they at length die emaciated. I have been informed, that ſome children have had the parts about the *anus* excoriated *; the *ſanies* retaining its virulency through the whole tract of the inteſtines.

The ſick ſometimes bleed at the noſe towards the beginning of the diſeaſe; and the *menſes* very often appear in thoſe of the female ſex who are of age to have them, ſoon after they are ſeized, notwithſtanding the regular period is at a conſiderable diſtance: if they are taken ill about the uſual ſeaſon, the diſcharge is commonly greater than it ought to be. Some young perſons, who never had the leaſt appearance of them, have had this evacuation during their illneſs.

In ſtrong and full habits, theſe evacuations are ſeldom attended with much benefit, or with

* Some adults, who have had the diſeaſe in a violent degree, have ſuffered very much from the ſame cauſe: emollient mucilaginous liquids taken plentifully, and alſo applied externally, by way of fomentation, to the part affected, frequently give ſpeedy relief.

manifeſt ill effects, unleſs they are very copious; for in this caſe they occaſion great faintneſs, and an increaſe of the other ſymptoms, in proportion to the exceſs. In tender weak ſubjects they are often prejudicial.

It has happened in this diſtemper, that hæmorrhages from the noſe and mouth have ſuddenly carried off the patient. I have heard of the like accident from bleeding at the ear: but theſe fatal diſcharges moſt commonly happen after the patient has been ill ſeveral days; and it ſeems more probable, that they proceed from the ſeparation of a ſlough from the branch of an artery, rather than from a fulneſs of the veſſels, or an effort of nature to relieve herſelf by a ſalutary criſis *.

Bleeding in this diſeaſe has in general been obſerved to be prejudicial: ſome indeed admit of it at the firſt attack, without any ſenſible inconvenience; but a repetition of it, even where

* This, I find, was alſo Heredia's opinion, who conſiders a diſcharge of blood, either from the mouth or noſe, as a ſign of the utmoſt danger.—Malignam ſignificationem præbet ſegnis ſanguis ſtillans e naribus; ex corroſione quippe vaſorum, et putrilagine emanat, innuitque certiſſimam mortem, quia putredo interne cohiberi non poteſt:—ideo periculoſiſſimus cenſetur ſanguinis fluxus ex naribus aut ore. Quidam cum hoc ſigno nullum vidiſſe liberatum docent: nos vero unicum ſolum ægrotum ſumma diligentia a tanto periculo vindicavimus. Heredia, p. 100. Of three whom I attended, and who had this ſymptom, two recovered: the third died of a bleeding at the noſe, before any aſſiſtance could be procured.

the

the diſeaſe is mild and favourable, ſeldom fails to aggravate the ſymptoms; and in ſome caſes it appears to have produced very fatal conſequences. The heat, reſtleſſneſs, delirium, and difficulty of breathing, which this evacuation commonly prevents or mitigates in other caſes, in this are increaſed by it: nor does the ſwelling of the *tonſils*, *fauces*, &c. ſeem to receive the leaſt benefit from it; on the contrary, though the fulneſs of theſe parts decreaſes, yet the ſloughs thicken, and change to a livid or black colour, the external tumour grows large, and the ſpitting commonly diminiſhes *.

Nor has purging been obſerved to be more beneficial: gentle cathartics have brought on very dangerous ſymptoms. Upon procuring a few ſtools with manna, eſpecially when the diſeaſe has continued two or three days, the redneſs of the ſkin has diſappeared, and the flux to the throat has been ſurpriſingly increaſed: if it happens that this diſcharge by ſtool continues, the ſwelling of the neck commonly grows larger; the *fauces* become flaccid, dry, and livid; and the patient in a few hours after this expires: ſo that purgatives ſeem to have no better effects in diminiſhing the tumour, and

* The heat, indeed, and quickneſs of the pulſe, ſeem at firſt to be affected by this evacuation, but they commonly return after a fallacious reſpite with greater violence; the patient is ſeized with a difficulty of breathing, falls into cold ſweats, a ſtupor, and dies ſuddenly.

abating

abating the ſuppoſed inflammation, than bleeding.

Nitrous cooling medicines frequently produce the like effects; they increaſe that faintneſs which accompanies this diſeaſe, and either diſpoſe the patient to copious ſinking ſweats, or to ſtools.

Upon the whole it appears, that all evacuations which tend to leſſen the natural ſtrength of the conſtitution, are in this diſeaſe injurious; and that thoſe perſons in common are in the greateſt danger, if attacked with it, who have been previouſly indiſpoſed, or have had their ſtrength impaired by grief, or any other accident. Of this it may not perhaps be improper to relate an inſtance or two in this place, as it will alſo tend to explain the uſual progreſs of the ſymptoms in the worſt caſes we meet with.

A young gentlewoman, about twenty-ſix years of age, of a pale lax habit, but of an active chearful diſpoſition, had enjoyed a pretty good ſhare of health in common, till a year or two before her laſt illneſs; about which time ſhe unhappily made uſe of ſome external and empirical application to remove a redneſs attended with pimples, which now-and-then broke out in her face. She was ſoon relieved from this complaint by the medicine ſhe uſed; but was quickly after ſeized with ſickneſs, vomiting, loſs of appetite, and either an obſtinate coſtiveneſs, or a troubleſome diarrhœa; the *menſes* were pale, and in ſmall quantities;

quantities; and her health in general was greatly impaired.

She had ſcarce recovered from this weak ſtate, when the death of a near relation brought her almoſt into the ſame circumſtances, from which ſhe was ſlowly recruiting, when ſhe married. Her ſickneſs, vomiting, and loſs of appetite, ſoon returned; which ſhe concealed as much as poſſible.

Under theſe diſadvantages, ſhe was ſeized with this diſtemper, a day or two after ſhe had viſited an acquaintance labouring under the ſame diſorder: it came on with a coldneſs and trembling like that of an ague-fit, great faintneſs, and an acute pain in her head, with a vomiting more violent than ſhe was uſually affected with, and a purging. Towards evening ſhe grew very hot and reſtleſs, complained of a ſoreneſs in her throat, and the diſcharges abated. Her face, neck, and hands were intenſely red: ſhe frequently ſighed, and from her aſpect and geſtures there was reaſon to ſuſpect a delirium approaching. She ſlept little that night; and next morning her pulſe, which before was very quick and ſmall, ſeemed to be ſomewhat more full, but not ſenſibly ſlower; and ſhe complained of faintneſs and anxiety. The parts about the *fauces* were much relaxed, very red, in ſome places almoſt livid, with a kind of gloſſy dryneſs upon them. She continued in this manner, without any remarkable increaſe of ſymptoms, till night, when the looſeneſs returned, and in a very ſhort time exhauſted

exhauſted her ſtrength to a great degree: the redneſs upon the ſkin diſappeared, the extremities grew cold, her eyes became dim, her pulſe ſcarce perceptible, ſhe breathed with difficulty, and expired in the morning, on the third day of the diſeaſe.

Another young woman, who frequently viſited, and ſometimes aſſiſted, a relation who had this diſeaſe, was attacked with it in the uſual manner. She was about ſeventeen, of a pale and ſomewhat bloated lax habit, naturally inactive, averſe to exerciſe, and was thought to have indulged ſome painful ſolicitude, to the prejudice of her health, and making way for an obſtinate chloroſis.

Under theſe circumſtances ſhe was ſeized with the uſual complaints, but in a violent manner. The purging continued till the day following; when it yielded for a time to the power of opiates; but conſtantly returned when their effects were over. The other ſymptoms, ſuch as heat, reſtleſsneſs, anxiety, and faintneſs, increaſed with the purging; the pulſe was ſmall, quick, and hard; a difficulty of breathing came on; the ſmall remains of luſtre in the eye periſhed; and ſhe died early on the fourth day of the diſtemper.

No marks of any ſloughs in the throat appeared in either of theſe caſes; but the redneſs became daily more intenſe, and approached nearer to lividneſs, whilſt the *fauces* could be inſpected, which, from the great difficulty they

had in breathing, was impracticable, ſeveral hours before the patients expired.

Warm aromatic cordials, and anodyne aſtringents, were adminiſtered aſſiduouſly, with ſuitable nouriſhment, and veſicatories applied ſucceſſively to the neck, back, and arms, but without effect.

If the purging therefore continues long after the firſt exacerbation of the diſeaſe, it may be looked upon as a dangerous ſymptom: for though it be ſometimes reſtrained for the preſent by opiates or aſtringents, yet it commonly returns with more vehemence when their efficacy ceaſes, and in a ſhort time exhauſts the ſmall degree of ſtrength remaining.

In this caſe they generally ſpit very little; the *fauces* appear dry, gloſſy, and livid; the external tumour grows large; they void their excrements without perceiving it, and fall into profuſe ſweats; reſpiration becomes difficult and laborious; the pulſe ſinks; the extreme parts grow cold, and death in a few hours cloſes the ſcene: and in no diſeaſe that I have ſeen, is the eye ſo early deprived of its luſtre as in this; for it is ſometimes opaque or dim ſeveral hours before death; and, as Ætius Cletus hath obſerved, is a fatal preſage of its approach *.

A copious

* Heredia's deſcription of the fatal progreſs of this diſeaſe, and the neceſſary cautions he gives in reſpect to the prognoſtic, deſerve particular notice.

Fallaciſſimam eſſe hujus morbi naturam, confitentur omnes.

A copious flux of pituitous matter to the glands, and other parts about the *fauces*, ſeemed to be the cauſe of ſudden death, in a girl about twelve years old. She was ſeized in the common way, with ſhivering, head-ach, ſickneſs, vomiting, and purging. The diſcharges abated in a few hours, and were ſucceeded by great heat, redneſs of the ſkin, and a ſore-throat; the *uvula*, *tonſils*, and contiguous parts, were red, and ſo ſwelled in eight or ten hours, as to touch each other, and ſeemed to cloſe the entrance into the *pharynx*. She breathed without much difficulty, ſwallowed with leſs pain than could be imagined, and ſpit up large quantities of phlegm. About ſix in the evening ſhe was ſeized with a difficulty of breathing, as if ſtrangled: thoſe

nes.—Ulceribus oris, et partium quæ viſui exiſtebant conſpicuæ, recte curatis, et ſedata inflammatione æger periclitatur.—Ex eo quod paulatim ſerpit putredo per aſperam arteriam ad cor, aut per gulam ad ventriculum, ſine aliquo dolore, aut febri ſenſibili, cujus ſit habenda cura: et cum medicis auxiliis, ablata fuerint ulcera, et inflammationes ſedatæ in partibus viſui patentibus, occulta putredo, paulatim mortificans partes internas, tabe, parviſſimis et debiliſſimis pulſibus extinctione caloris, refrigeratione extremorum, faciei extenuatione, inappetentia perpetua, et moleſta mutatione decubitûs, ſomno fallaci, et apparente, quia vigilandi impotentia, ſomnum verum æmulatur, miſere ægrotantes interficit, ut viſum jam ſit ſubita et inopinata morte periiſſe aliquos,—e lecto ſurgentes, et intra domos ambulantes; ob quod etſi quæ vitiata apparebant in faucibus, aut partibus aliis, in melius mutata conſpiciantur, non licet ſalutem polliceri, quia ſolet communicari paulatim putredo, et gangræna partibus internis. Heredia, p. 99.

about

about her raiſed her up, thinking ſhe was in a fit; ſhe recovered herſelf a little, but expired upon being again laid down in bed, in ſomewhat leſs than twenty-four hours from the firſt attack. A large quantity of viſcid phlegm, with which, after ſhe was dead, her mouth appeared to be filled, together with the tumefied *uvula*, *tonſils*, and *velum palati*, had perhaps jointly cloſed the *rima glottidis*, and put a ſtop to reſpiration.

By a fall in her infancy ſhe was reduced to the neceſſity of uſing crutches. She was big-boned, had a good appetite, and, for want of that exerciſe which perſons at her age commonly enjoy, ſeemed to be plethoric. Theſe circumſtances, perhaps, might contribute to this ſpeedy and unhappy event.

Accidents of the like kind ſeem not to have been uncommon while this diſeaſe continued in Italy, according to a remark of Corteſius *.

From the preceding account of the Sore-throat attended with Ulcers †, it will, I believe, appear, that this diſeaſe is widely different from a common Sore-throat, or ſimple inflammation

* —Ad prædictarum partium (Uvulæ, Tonſillarum) inflammationem ſubſequebatur interdum materia quædam pituitoſa a capite tam repente et inopinato deſcendens, ut miſeri ægrotantes ſubito ſuffocarentur. Corteſ. Miſcell. p. 697.

† The diſeaſe here treated of is, ſtrictly, "a Sore-"throat;" ſince by ſoreneſs we aptly expreſs the uneaſy ſenſation accompanying an ulcer (i.e. a ſore) and not that which attends an inflammation, which is indeed pain, but not properly ſoreneſs.

of

of any of the parts about the *fauces*; both as to the ſubject commonly affected by it, the manner of its attack, the progreſs of the ſymptoms, and its concluſion: for the Sore-throat with Ulcers generally attacks children; and of theſe, girls more frequently than boys, as hath been obſerved. If adults are ſeized with it, they are commonly ſuch as have been very much converſant with the ſick, or elſe are weak and infirm: and it ſeems to affect thoſe adults in the ſevereſt manner, who have been previouſly indiſpoſed, or whoſe ſtrength has been reduced by unſeaſonable or immoderate evacuations.

On the contrary, the common *Angina*, or an inflammation of the *tonſils*, moſt frequently attacks the healthy, the vigorous, and robuſt; the weak, the delicate, and infirm, are leſs expoſed to it, at leaſt ſuffer leſs from it, than the former.

As both diſeaſes are attended with a fever, and as moſt fevers come on with ſhivering, or chillneſs, this ſymptom may at leaſt appear equivocal: but if ſickneſs, or vomiting, or purging, or an acute pain of the head, towards the back parts or top eſpecially, or if all theſe come on in the ſpace of a very few hours, which they generally do where the diſeaſe is vehement, it may juſtly be eſteemed to be of the putrefactive kind; but if with theſe ſymptoms an eryſipelatous redneſs diſcovers itſelf in the *fauces*, with ulcerations or ſloughs, the diſeaſe is evident.

In ſome caſes, the ſymptoms have been ſo obſcure,

ſcure, that it was difficult to determine to which diſeaſe they properly belonged: but in theſe circumſtances they were commonly ſo favourable, that, ſuppoſing the diſorder not to be of the ulcerated kind, no other inconvenience ſeemed likely to enſue from treating it as ſuch, than a ſuppuration; which is often an event rather to be choſen than avoided.

The redneſs of the ſkin in the face, neck, breaſt, and hands, is another obvious and diſtinguiſhing characteriſtic, which in children, and young people eſpecially, ſeldom fails to accompany this diſorder.

In the common Sore-throat, a local inflammation is the diſeaſe; all the ſymptoms are derived from this ſource; and an acute throbbing pain, greatly increaſed upon ſwallowing even liquids, is the principal grievance. In the other, the whole habit ſuffers, as if by a *ſtimulus* of a peculiar nature; and although the throat is always more or leſs affected, yet it is ſometimes the leaſt part of the patient's complaint; and inſtances have occurred to me of conſiderable ſloughs being formed, before any ſoreneſs or pain in the *fauces* hath been mentioned.

Again, this diſeaſe is accompanied with a greater tendency to a delirium, than either a common *Angina*, or almoſt any other diſtemper we are acquainted with. To have this ſymptom appear, in the diſeaſe we are treating of, on the firſt night, is not uncommon; and on the ſecond, frequent. A girl about eight years of

age, whom I attended, was ſcarce known to be indiſpoſed, till ſhe alarmed the family, by appearing to be light-headed. She had made no complaint of her throat, nor was this part thought to be affected, till, upon examination, I found it ſo; being led to ſuſpect it by the colour of her hands, and the delirium. She got well through the diſeaſe, though its progreſs, at firſt, appeared to be very ſwift.

A common Sore-throat, if the patient recovers, either goes off by reſolution, or the parts affected ſuppurate; or, if glandular, become hard and ſchirrhous.

In that attended with ulcers, none of theſe circumſtances happen; for it terminates in a ſuperficial ulceration of ſome of the parts about the *fauces*, if the diſeaſe is very mild, with little appearance of any ſloughs, and with large and deep ones, of a white cineritious, livid, or black colour, if it is more violent.

It will not, perhaps, be difficult, from ſuch a comparative view, to diſtinguiſh this diſeaſe from a common Sore-throat, or an inflammatory affection of thoſe parts, in moſt inſtances: but there is another no leſs certain criterion, though too often a fatal one, which is the conſtant increaſe of ſymptoms upon bleeding, purging, and the liberal uſe of cooling antiphlogiſtic medicines: a method, which, as it ſeldom fails to remove a genuine inflammation, if it is early enough and aſſiduouſly purſued, ſo it is too often injurious in the preſent caſe; an inſtance whereof I think

think evidently appeared in the following ſubject.

A youth about fourteen years old, of a briſk, lively diſpoſition, who had enjoyed a good ſhare of health, ſaving that, for a few years paſt, a cutaneous diſeaſe, a-kin to a leproſy, had ſometimes appeared on his head and arms, was ſeized one morning with a general uneaſineſs, and a diſpoſition to vomit; he was put to bed, and a ſevere ſhivering enſued; his ſickneſs increaſed, he vomited up every thing, had ſeveral purging ſtools that day, and complained much of his head, with ſome ſoreneſs in his throat. He was ordered to be bled, and had an emetic given him: this operated but little; he grew hot and reſtleſs, a deep redneſs ſpread itſelf over his face, hands, and arms, with a plentiful eruption of ſmall pimples, which induced thoſe about him to apprehend it was a common ſcarlet fever.

The next day, which was the ſecond of the diſeaſe, his throat continuing ſore, and the feveriſh ſymptoms increaſing, a purge of manna was given him, which operated gently; and at night his head and throat being more uneaſy, his heat ſtill continuing, with a tendency to delirium, a bliſter was applied.

On the third, the ſymptoms not abating, he loſt about ten ounces of blood. He had taken a cooling nitrous powder every four hours; this was now changed for one more cordial. At night he grew delirious, his fever increaſed, and he had ſome looſe ſtools, which were rather en-

couraged than reſtrained, as it was hoped they might relieve him. Bliſters were applied to his head and arms.

On the fourth in the morning I was ſent for: I found him delirious, with convulſive twitchings; his hands were in conſtant motion, gathering the bed-clothes; his pulſe was quick and weak, and his tongue parched. With ſome difficulty I looked into the *fauces*; they ſeemed to be pale in ſome places, intenſely red or livid in others, with a gloſſy brightneſs: his excrements came away involuntarily; his eyes were languid and dim: he breathed with difficulty, fell into profuſe clammy ſweats, and died in a few hours after.

In ſome of the firſt caſes I met with, the quickneſs of the pulſe, the degree of heat, the apparent inflammatory redneſs of the eyes and face, and pain in the head, ſometimes urged me to order bleeding, eſpecially if there were any marks of a plethora; but in theſe caſes it did not appear to have any advantageous effects: ſo that, notwithſtanding the vehemency of the ſymptoms above mentioned, it ſeems proper in general to omit this evacuation.

Cupping with ſcarification has been applied to the ſhoulders and back of the head, in order to remove an acute pain of this part, which is often complained of, but, as far as I have been able to obſerve, without much benefit.

It is neceſſary that the patient ſhould keep in bed as much as may be, though the diſeaſe

ſhould

ſhould ſeem to be ſlight: it has happened, for want of care in this reſpect, that a purging has come on, the redneſs of the ſkin diſappeared, and a diſorder which, with confinement alone, would probably have gone off in twice twenty-four hours, has been rendered tedious and difficult.

If we are called in at the firſt, while the ſickneſs or vomiting continues, it will be of uſe to promote this diſcharge, by giving an infuſion of green tea, camomile-flowers, *carduus*, or a few grains of *ipecacuanha*. In ſome inſtances, where the attack has been ſevere, and this method practiſed, the diſorder has gone off with more eaſe than was at firſt apprehended.

If theſe ſymptoms do not abate with the operation of the emetic, ſmall draughts of mint-tea, with a ſixth part of red-port added to it, may be given frequently; together with ſome grateful and warm aromatic, cordial medicine, every four or ſix hours. The *Pulvis Contrayervæ ſimp.*---*comp. Confect. cardiac.*----*Raleigh. Spec. arom. Vinum croceum*; *Aq. Menth. ſpirit. Aq. Alex. ſpirit. cum Aceto* *; with others of the like nature, may be uſed for this purpoſe.

In this diſeaſe, it is at all times neceſſary to

* Vegetable acids, ſuch as the juice of lemons, oranges, wood-ſorrel, verjuice, vinegar in ſmall doſes, and the like, as they are undoubtedly antiputreſcents, may ſeem to be indicated; but their proneneſs to increaſe the diſcharge by ſtool, or profuſe ſweats, ought to render us very circumſpect in uſing them.

attend very carefully to the diarrhœa. For the moſt part it ceaſes with the vomiting, in leſs than twelve hours from the firſt attack: if it continues longer than this period, it is neceſſary to check it, otherwiſe it occaſions great faintneſs, ſinks the ſtrength, and in the end produces very dangerous conſequences. The aromatic cordials above mentioned, if they are given plentifully, commonly take off this ſymptom, as well as the vomiting; but if they prove ineffectual, recourſe muſt be had to aſtringents and anodynes, in proportion to the exigence of the caſe; ſuch as the *Confectio Fracaſtorii*, or *Elect. e Scordio*, diſſolved in ſmall cinnamon-water, and given *poſt ſingulas ſedes*.

It is common for the redneſs, ſo often mentioned, to appear upon the ſkin, as theſe diſcharges abate: it has happened that this colour has gone off ſometimes, and the patient has been brought into imminent danger, upon giving a mild cathartic: which circumſtances, as they point out a cloſe connection between them, indicate the uſe of a warm regimen, notwithſtanding the heat and other ſymptoms might ſeem to forbid it.

A girl about nine years old, of a ſlender make, but healthy and active, was ſeized with this diſorder. The ſickneſs and vomiting went off, and the redneſs of the ſkin appeared ſoon after: the apothecary who attended her, judging it an inflammatory caſe, as ſhe complained of her throat, bled her, gave her a cooling purge the

next

next day, and afterwards ſome nitrous draughts. A plentiful efflorescence which covered the face, neck, and arms, ſuddenly diſappeared; a diarrhœa came on; ſhe grew reſtleſs, faint, and inſenſible. In this condition I firſt ſaw her on the third day of the diſeaſe; ſhe frequently ſighed, her pulſe was quick, ſmall, and hard, without any remarkable colour upon her ſkin; and the ſwelling on each ſide the neck large: it was not poſſible to examine the *fauces*, as ſhe lay in a comatous motionleſs condition, her ſtools and urine coming away inſenſibly. A warm cordial mixture * was frequently given her, upon which the diarrhœa ſoon abated; and the next day the efflorescence again appeared upon her face and arms. From this time ſhe continued to recover, though ſlowly, and was for ſome time attended with a cough and hectic heat.

Another ſymptom, which requires our attention in the cure of this diſeaſe, is an exceſſive faintneſs: of this they generally complain ſoon after they are taken ill, and continue to do ſo, if ſenſible, till the diſtemper begins to abate: the urgency of this ſymptom ſeems to indicate the degree of danger: it is more or leſs violent, as the diſeaſe is mild or malignant; and an abate-

* ℞. Aq. Alexit. ſimp. ℥vj. Alexit. ſpir. cum acet. ℥jſs. Conf. cardiac. ʒſs. Pulv. Contray. ſimp. ʒſs. Syr. Croc. ℥ſs. f. mixt. de qua capiat ægra coch. ij. tertia quaque hora.

ment of it may be looked upon as a pretty ſure preſage of recovery.

Warm aromatic and gently ſtimulating medicines, ſuch as have been already mentioned, as the moſt effectual to ſuppreſs the vomiting, and check the looſeneſs attending this diſeaſe, have likewiſe been found uſeful in removing this ſymptom: and though the degree of heat, and quickneſs of the pulſe, would be enough to diſſuade a perſon who has not ſeen the diſeaſe, from giving them in ſo liberal a manner as neceſſity requires; yet we are not to be governed ſo much by theſe ſymptoms, as by the faintneſs, depreſſion of the pulſe, and increaſe of putreſcency in the *fauces*. One dram of the *Confectio Raleighana* has been given to a youth not quite 15 years of age, every four hours, which was ſoon followed by a ſenſible amendment, and the decreaſe of the patient's reſtleſſneſs, faintneſs, and heat.

Some of the Italian phyſicians forbad the uſe of wine in the cure of this diſeaſe, and the warmth of their climate might perhaps make this caution neceſſary; but as it is a generous cordial, and at the ſame time antiſeptic, it ſeems to be in no reſpect improper here; and, beſides, in whey, I have allowed it to be given, freely, mixed with mint, baum, or ſage-tea, barley-water, gruel, panada, ſago, and the like; and alone, where the faintneſs has been exceſſive; the age, the former way of life, and the ſymptoms, affording the neceſſary rules as to quantity

and

and kind. Chicken-water, or thin broth, may alſo be allowed, which is frequently very acceptable to the patient. And I don't remember to have obſerved ſo general and early an inclination after animal food, in any acute diſeaſe, as in this: for at a time when one would imagine, both from the condition of the *fauces*, and the degree of heat, that liquids would be the moſt acceptable, it is not uncommon to find children, who have this diſeaſe, extremely deſirous of chicken, and chearfully complying with directions, in hopes of being gratified in this reſpect.

Bliſters are likewiſe of uſe to relieve the faintneſs. At firſt I was in doubt, leſt the flies, by their acrimony, ſhould increaſe the putreſcent diſpoſition, and conſequently aggravate the diſorder they were intended to remove: but no ſuch effect having appeared from their uſe, I have ordered them to be applied, and I think with advantage, both to the uſual parts, and to the neck on each ſide from below the ear almoſt to the clavicle, as occaſion required *.

The ulcers in the throat demand our early and conſtant attention, as a conſiderable loſs of ſubſtance cannot here be ſuffered without immediate danger to life itſelf, or the moſt injurious conſequences to the future action of the parts, if the patient ſurvives.

* It has been obſerved by ſeveral, that the diſcharge from bliſters in this diſeaſe is in general both more copious at firſt, and continues longer than is uſual in other caſes.

Where

Where the diſeaſe is of the mildeſt kind, a ſuperficial ulceration only is obſervable; which may eaſily eſcape the notice of a perſon unacquainted with it. A thin, pale, white ſlough ſeems to accompany the next degree: a thick, opaque, or aſh-coloured one is a further advance: and if the parts have a livid or black aſpect, the caſe is ſtill worſe. Theſe ſloughs are not formed of any foreign matter ſpread upon the parts affected as a cruſt or coat, but are real mortifications of the ſubſtance; ſince, whenever they come off, or are ſeparated from the parts they cover, they leave an ulcer of a greater or leſs depth, as the ſloughs were ſuperficial or penetrating.

When the tendency to putrefaction is ſtopped, theſe ſloughs in moſt caſes come off ſpontaneouſly; or their ſeparation may be promoted by ſuitable remedies and applications: but it ſeems by no means adviſeable to attempt it by force, or to ſcrape them off with the fingers or inſtruments, as Severinus propoſes; ſince the experiment has been tried, but with ſuch unhappy conſequences *, as

* Si quis tamen vel digitis, vel aliquo inſtrumento levi ipſam (materiam albam) auferre tentâſſet, quamvis operatio hæc fieret abſque dolore, ea tamen ablata breviſſimo tempore peribant ægrotantes; quod præ cæteris in Petro Soprano genero meo obſervatum eſt, cui cum hujuſmodi mortificatio apparuiſſet in ſuprema ſuperficie dictarum glandularum faucium, et palati, ita ut videretur eſſe maximo reſpirationi et deglutitioni impedimento, chirurgus exiſtimans poſſe facillimo negotio a ſubjectis partibus eam ſeparari ſolis digitis, leviſſime quidem eam abſtulit; quæ ablata, tantum abeſt ut juverit deglutitionem aut reſpirationem, ut utraque potius

as are ſufficient to diſcourage one from perſiſting in this method *.

In a caſe where I was concerned, previous to my being called in, a ſurgeon had endeavoured to ſeparate the ſloughs by the aſſiſtance of his probe: he ſucceeded in his attempt without much difficulty; but was ſurpriſed to ſee the ſame parts covered the next day with thick, dark, aſh-coloured ſloughs, penetrating deep into the ſubſtance.

It is true, the ſloughs have been ſometimes ſcarified, from an apprehenſion that matter was lodged underneath them, without any manifeſt inconvenience; but as there are inſtances of fatal mortifications having enſued, it ſeems moſt prudent to decline the practice.

From under theſe ſloughs, and from every part of the ulcers which they cover, a thin corroſive *ichor* is diſcharged, ſo acrid as to excoriate the external parts upon which it is ſuffered to remain. This is ſometimes obſervable in adults, when the parts above the *fauces* are affected;

potius actio læſa magis fuerit, unde breviſſimo tempore miſer, meo cum maximo dolore, mortem oppetiit; id quod etiam in aliis quamplurimis pueris ſæpius obſervavi, et præſertim in ejuſdem Petri filiolo nepoti ex filia, quinque annorum, mihi cariſſima, qui poſt paucos dies eodem modo, quo pater, vitam cum morte mutavit. Corteſ. Miſcel. Med. p. 697.

* Quod ſi enim adhærentem adhuc cruſtam avellere aggrediamur, ulcerationes magis in profundum procedunt, et inflammationes conſequuntur, augentur dolores, et in ulcera ſerpentia proficiunt. Heredia, p. 109.

the *ichor* in theſe caſes flows through the noſtrils, and frequently raiſes pimples and ſmall bliſters on the ſkin of the upper lip; but it is moſt obvious in children, who often have this part, the corners of the mouth, and the cheek on which they commonly lie, bliſtered or excoriated.

It is probable, as hath been already hinted (p. 374), that part of the ſame virulent matter, paſſing down the *æſophagus* into the ſtomach and inteſtines, acts upon them as it does upon the ſkin, when applied to it externally; it frets and corrodes the parts it touches, and produces that ſickneſs, vomiting, purging, and faintneſs, which ſometimes accompany this diſeaſe in different parts of its progreſs.

In children, and very young ſubjects, the ſymptoms ariſing from this cauſe are yet more dangerous: the natural ſoftneſs and laxity of the parts liable to be affected, diſpoſes them to ſuffer by it much more than adults: at the ſame time they are commonly alike incapable of promoting the diſcharge of this matter themſelves, and of admitting aſſiſtance from others, being generally, if the diſtemper is not very mild, either comatous and ſtupid, or delirious and untractable. If gargles are injected, they either prevent them from reaching the ſeat of the diſorder, by their tongues, or they ſwallow them, and the putrid taint of the ulcers, together; the miſchief ſpreads beyond the power of art to reſtrain it; violent purgings enſue, or fatal hæmorrhages

morrhages from the penetrating gangrene. And to this, perhaps, it may in part be owing, that children ſuffer ſo much more from this kind of Sore-throat, than adults *.

That this corroſive matter produces theſe effects is farther confirmed, by obſerving, that thoſe whoſe throats are ſeverely affected, if they have a plentiful diſcharge from the *fauces*, are ſeldom attended with ſickneſs, vomiting, or exceſſive faintneſs; tho' after longer ſleeps than ordinary, or a neglect of encouraging this evacuation, they have complained of ſickneſs, and have had retchings come on: and in ſuch caſes, where there has been little or no diſcharge of this kind, the ſymptoms are commonly the moſt dangerous.

From hence it is obvious, that great advantages may be expected from the conſtant uſe of gently ſtimulating aromatic gargles; as they promote the diſcharge of the pituitous matter flowing to the *fauces*, and doubtleſs, with it, of ſome part of the corroſive fluid above mentioned: to which if we add antiſeptics and detergents, in order to check the progreſs of the mortification, and cleanſe the ſordid ulcers it produces, every indication is provided for.

* Heredia takes notice of the ſame thing, and gives it as a principal reaſon why ſo many infants and children ſuffered by this diſeaſe.

Infantum et puerorum multitudo maxima periit, quia nec exſpuere, nec excreare lentas et cruſtaceas materias poſſunt, et minus auxiliis obediunt. p. 100.

Where

Where the diſeaſe is mild, the ſymptoms favourable, the ſloughs ſuperficial, or ſcarce perceptible, it may be ſufficient to order a gargle of ſage-tea, with a few roſe-leaves added in the infuſion; three or four ſpoonfuls of vinegar may be mixed with half a pint of the tea, and as much honey put to it as will leave it agreeably acid.

But where the ſymptoms are urgent, the tendency to putrefaction great, the ſloughs large and thick, and the breath offenſive, recourſe muſt be had to more efficacious remedies: a compoſition like the following, varied only as the patient's age and the circumſtances of the diſeaſe required, has in general been attended with very good effects. The proportion here given may be uſed for adults, and the more active parts leſſened for younger ſubjects.

℞ *Decoct. Pectoral.* ℥xij. *cui inter coquendum add. Rad. Contrayerv. contuſ.* ʒſs. *Liquori colato admiſce Acet. Vin. Alb.* ʒij. *Tinct. Myr.* ʒj. *Mel. opt.* ʒvj. *f. Gargariſma.*

As the parts about the gullet are frequently ſo much affected, as to render it painful or impracticable for the ſick themſelves to make uſe of the gargle ſo freely as they ought, it is commonly ordered, that a few ſpoonfuls of this liquor, made ſomewhat warm, ſhould be very often injected into the *fauces* with a ſmall ſyringe; and eſpecially before the patient ſwallows any thing,

thing, in order to wash off as much as possible the putrid *fordes* adhering to the ulcers, and prevent it from passing into the stomach and bowels *. In young subjects this method is the more necessary, as they don't always know how to manage a gargle to any purpose, did the soreness of the parts permit them to do it †.

As so much depends upon the frequent use of gargles, or rather of injections, a strict attention to this affair can scarcely be too strongly enjoined on those who have the care of the sick committed to them; since an assiduous repetition of these lotions not only promotes a discharge from the glands of the throat, which is probably of great use ‡, but retards the progress of the ulcers, by washing off the putrefactive corroding *virus*, and prevents a large train of very dangerous symptoms (see p. 395.); and has therefore been strenuously insisted on by several writers, by Mercatus especially §.

* The same caution was given by Heredia, and almost in the same terms.—Cujusque rei deglutitionem præcedat excrementorum oris excreatio, detersio, ne lotione venenosa excrementa cum rebus deglutiendis ferantur ad viscera. p. 109.

† — cum pueri nequeant gargarismatis uti, injiciantur cum syringa. Idem, ibid.

‡ Heredia, after having observed, that no evacuations by stools or sweat were of use in this disease, admits that some advantages may be expected from this discharge. Est autem aliqua spes in frequenti exspuitione, quando crassa et glutinosa excreatur. p. 100.

§ Cavendum est diligenter, ne sic affecti deglutiant propriam salivam, quinimo ora puerorum diligentissime sunt abluenda. Mercat. p. 137.

If

If the ſloughs are large, and caſt off ſlowly, they may be touched with *Mel. Egyptiacum*, by means of an armed probe; or if the condition of the *fauces* is ſuch, that this cannot conveniently be done, a ſpoonful of the following mixture may be injected, and retained in the throat as long as the patient can endure it; the parts may then be waſhed two or three times with the gargle alone.

℞ *Gargariſm. præſcript.* ℥ij. *Mel. Ægypt.* ʒj. *m.*

By the conſtant and regular uſe of theſe applications, if the patient is kept warm, and the method of treating him in other reſpects is obſerved, agreeable to what has been mentioned above, it ſeldom happens but that the febrile ſymptoms diſappear, the ſloughs come off, and the ulcers are diſpoſed to heal in a few days; unleſs it be where miſmanagement at firſt, malignity of the infection, or an unfavourable conſtitution, have one or all contributed to increaſe the diſeaſe, and to render its conſequences more laſting and miſchievous.

What effects improper treatment produces in this caſe, has already been obſerved. With regard to the matter of contagion, or the nature of that cauſe which ſo ſuddenly brings on ſuch a train of ſymptoms as hath been deſcribed, little can be ſaid with any degree of certainty: thus much, however, ſeems to be true in fact, that in ſome caſes this diſeaſe appears to be of ſo mild a nature, and ſo benign, as to require

but

but little assistance from art: persons even recover from it under the disadvantages of unskilful and injurious management; whilst, in others, the progress of the symptoms is so rapid, and the tendency to corruption so strong, that nothing seems able to oppose it. Just as it happens in the small-pox; the benign and distinct sort bears ill treatment without injury; in the malignant flux kind, the utmost art and experience are too often insufficient to conduct the distemper to a happy issue. Whether this diversity in the Sort-throat we are speaking of, is owing to a difference of constitutions, or of seasons; to the different quality or quantity of the contagion, or the manner of receiving it; or whether there are in reality distinct species of it; may perhaps hereafter be more certainly determined.

With respect to constitution, it may be further observed, that, in soft, lax, leucophlegmatic habits, and languid, inactive dispositions, every thing else being equal, the disease seems to proceed more slowly, to go off more irregularly, and to leave behind it more lasting effects. In some persons of the temperament described, though the fever has grown less, and all the symptoms abated in four or five days, yet the sloughs in the throat have continued almost a week after; whilst in the opposite constitution, though the disease has been much more acute, yet the symptoms have no sooner abated, than

the ſloughs have caſt off, and the ulcers healed of their own accord.

A copious hæmorrhage from the noſe, mouth, or ears, the laſt eſpecially, coming on after the diſeaſe has continued three or four days, or longer, is a dangerous *phenomenon:* for, at this time of the diſtemper, it moſt probably proceeds from the branch of an artery deſtroyed by the mortification, and laid open by the ſeparation of the ſlough, as hath been already obſerved. If the veſſel is therefore large, the bleeding may prove fatal to the patient in a very ſhort time; or if he eſcapes for the preſent, the loſs of a conſiderable quantity of blood at this time of the diſeaſe will occaſion various ill conſequences.

It is therefore abſolutely neceſſary to endeavour to ſtop this diſcharge with all the expedition poſſible. If the patient is coſtive, it will be of uſe to procure relief in this reſpect, by clyſters or ſuppoſitories, as ſoon as can be done: to apply vinegar, by means of tents, or otherwiſe, as near to the orifice of the veſſel as we can: to convey the ſteam of it into the *fauces* and noſtrils plentifully, and to keep the patient in a ſitting poſture, or his head raiſed as high as may be, and his upper parts moderately cool: if theſe methods do not immediately take effect, recourſe muſt be had to more efficacious ones, amongſt which we may rank the *bark* and *opium*.

It is not uncommon for hectic heats, night-

ſweats,

ſweats, want of appetite, and dejection of ſpirits, to attend thoſe a conſiderable time, who have had the diſeaſe in a ſevere manner. Freſh air, aſſes milk, and other uſual means of recovering the waſted ſtrength, in a ſhort time reſtore to ſuch invalids their priſtine vigour.

Having thus related the moſt material circumſtances that have occurred to me in reſpect to the ſymptoms, progreſs, and event of this diſtemper, the *juvantia*, *lædentia*, and the accidents chiefly to be regarded in its cure, in ſuch a manner as I hope will enable thoſe who have not ſeen or known it, to diſtinguiſh it from a *common Sore-throat*, and to treat it with ſome degree of propriety and ſucceſs when it occurs, I ſhall conclude with obſerving,

1. That the *Sore-throat attended with Ulcers*, ſeems to be accompanied with a ſtrong diſpoſition to putrefaction, which affects the habit in general, but the *fauces*, and the parts contiguous, in particular. And it ſeems not unreaſonable to ſuppoſe,
2. That the cauſe of this tendency is a putrid *virus*, or *miaſma ſui generis*, introduced into the habit by contagion; principally by means of the breath of the perſon affected.
3. That this *virus*, or contagious matter, produces effects more or leſs pernicious, according to the quantity and nature of the infection, and as the ſubject is diſpoſed to receive or ſuffer by it.

4. That putrefactive and malignant diſeaſes, in common, admit of the moſt ſenſible and ſecure relief, from diſcharges of the peccant matter, either upon the ſkin in general, or on particular parts of the body.

5. That the redneſs, and cutaneous efflorescence, in the preſent caſe, may be conſidered as an eruption of the like nature, and therefore to be promoted by ſuch methods as have proved ſucceſsful in ſimilar diſeaſes.

6. That a cordial, alexipharmac, warm regimen, has been found by experience to be of the moſt uſe in ſuch caſes; and that bleeding, purging, antiphlogiſtics, liberally employed, either retard or wholly prevent theſe diſcharges.

Therefore, as to expel the morbific matter (3) ſeems to be the deſign of Nature, to promote this deſign by the meaſures that are approved by experience in analogous diſorders, is the duty of the Phyſician.

ARBUTUS *Andrachne*.

Jno. Lodge Sculp.

A

DESCRIPTION

OF THE

ANDRACHNE*,

WITH ITS BOTANICAL CHARACTERS:

By G. D. EHRET, F. R. S.†

Read before the ROYAL SOCIETY, February 26, 1767.

FROM a ſhort and crooked ſtem go off irregularly ſeveral branches bending in various directions; but the younger ſhoots moſtly pointing upwards. The height of the ſhrub is now about four feet.

The ſtem and branches are of different colours at different ſeaſons. In the ſpring, they appear of a greeniſh cinnamon colour: this is gradually heightened to almoſt a red during winter; towards the end of which, the epidermis peels off,

* I have introduced this deſcription of the Andrachne, though written by Ehret, as I have reaſon to think it was done under the influence of Dr. Fothergill. This beautiful exotic is now in a flouriſhing ſtate at Upton, in the open ground: it is about twelve feet high. *Editor.*

† Philoſophical Tranſactions, vol. lvii. anno 1767, p. 114.

and the new bark exhibits the like appearance as it had the ſpring before.

On the extremities of theſe branches, the ſhoots of the preceding year, which are of a deep red colour, are many leaves of different ſizes, placed irregularly; the largeſt leaves were in length, when the figure was drawn, about four inches, and two inches and an half in breadth, of an oval figure: they are moſtly entire, though the edges of ſome are lightly ſerrated: their ſurface is ſmooth and lively, but not gloſſy or ſhining. They are ſupported on the branches by footſtalks about an inch long, of a red colour, and ſmooth.

The young leaves, at their firſt appearance, are of a faintiſh green, with a caſt of yellow, yet beautifully ſhaded with red: their footſtalks and middle rib are then hoary, but they loſe this appearance as they grow older.

This very rare ſhrub produced its flowers, for the firſt time in England, in the garden of Dr. John Fothergill, at Upton, near Stratford, in Eſſex, May 1766. The principal ſpikes of flowers in this ſpecies of arbutus are erect, producing many ſide ones in a horizontal direction, their extremities inclining downwards. Each of theſe ſimple ramifications contain many white globular flowers, hanging on long hoary glutinous pedunculi, which are ſituated alternately. Theſe ſpikes of flowers, forming a kind of looſe tuft, with the bright bunches of leaves, have an elegant appearance.

CHARACTERS

CHARACTERS of the FLOWER.

TAB. VI.

Fig. *a.* repreſents a ſide view of the flowers; they are of a globular ſhape, and open into five obtuſe reflex laciniæ, in the manner of the common arbutus.

Fig. *b.* a back view of the flower, upon which appears the calyx ſpread open, and cloſely adhering to the flower; it conſiſts of five oval pointed leaves or diviſions: around this calyx appear on the corolla ten viſible nectaria.

When theſe flowers drop off, the calyx cloſes up, and embraces the tender germ. See Fig. *c.*

Fig. *d.* repreſents a flower ſeparated from the calyx; it is inſerted at the baſe of the germen. The ten nectaria, which are ſomewhat ſwollen, or raiſed from the corolla, and have tranſparent appearances, are alſo diſcoverable, whilſt the magnified figure *e* lays the parts more diſtinctly in view. This is a remarkable character in this flower.

Fig. *f.* exhibits the flower laid open: it is ſmooth without, and hoary within; it contains ten ſtamina, which are inſerted at the baſe of the flower; their filaments and apices embrace half the ſtyle.

Fig. *g.* two ſtamina magnified, the baſe whereof is a tender fleſhy ſubſtance, hoary, and of a club-like ſhape; this diminiſhes gradually into a filament, upon which is ſituated a ſingular anthera: this anthera burſts at two apertures

(as the figure repreſents), and diſperſes its farinaceous duſt towards the ſtyle: from the top of this apex, comes forth, at the oppoſite ſide, two crooked forked horns, bending downwards in length of the antera.

Fig. *b*, the germen or rudiment magnified. This is hoary; its baſe conſiſts of a red fleſhy ſubſtance, with ten obtuſe angles. The ſtyle ſupports a ſmall globular ſtigma, and does not exceed the length of the flower.

Fig. *i*. repreſents a horizontal view of the germen, as obſerved through a lens: it has five regular loculaments or cells, though ſeemingly but one ſeed; but by a cloſer inſpection, there appeared ſeveral embryo ſeeds in each cell.

Fig. *k*. a dried fruit or berry of the Andrachne in its natural ſize, with an horizontal ſection. This fruit, which is tuberculous, I drew from a ſpecimen conſiſting of the whole branch, leaves, flower-ſpikes, with many ripe berries, which was brought from Aleppo, by Dr. Alexander Ruſſell; all which I examined and deſcribed at that time for my own ſatisfaction, and find them to agree exactly with the recent ſhrub above deſcribed. It likewiſe ſeems worthy of obſervation, that the plants raiſed by the gardeners by grafting or inarching the Andrachne upon the common arbutus, which is the method chiefly uſed in propagating this elegant ſhrub, differ conſiderably from the plants raiſed from ſeed, particularly in this, that the young branches, and the footſtalks of the leaves, are very hairy,

and

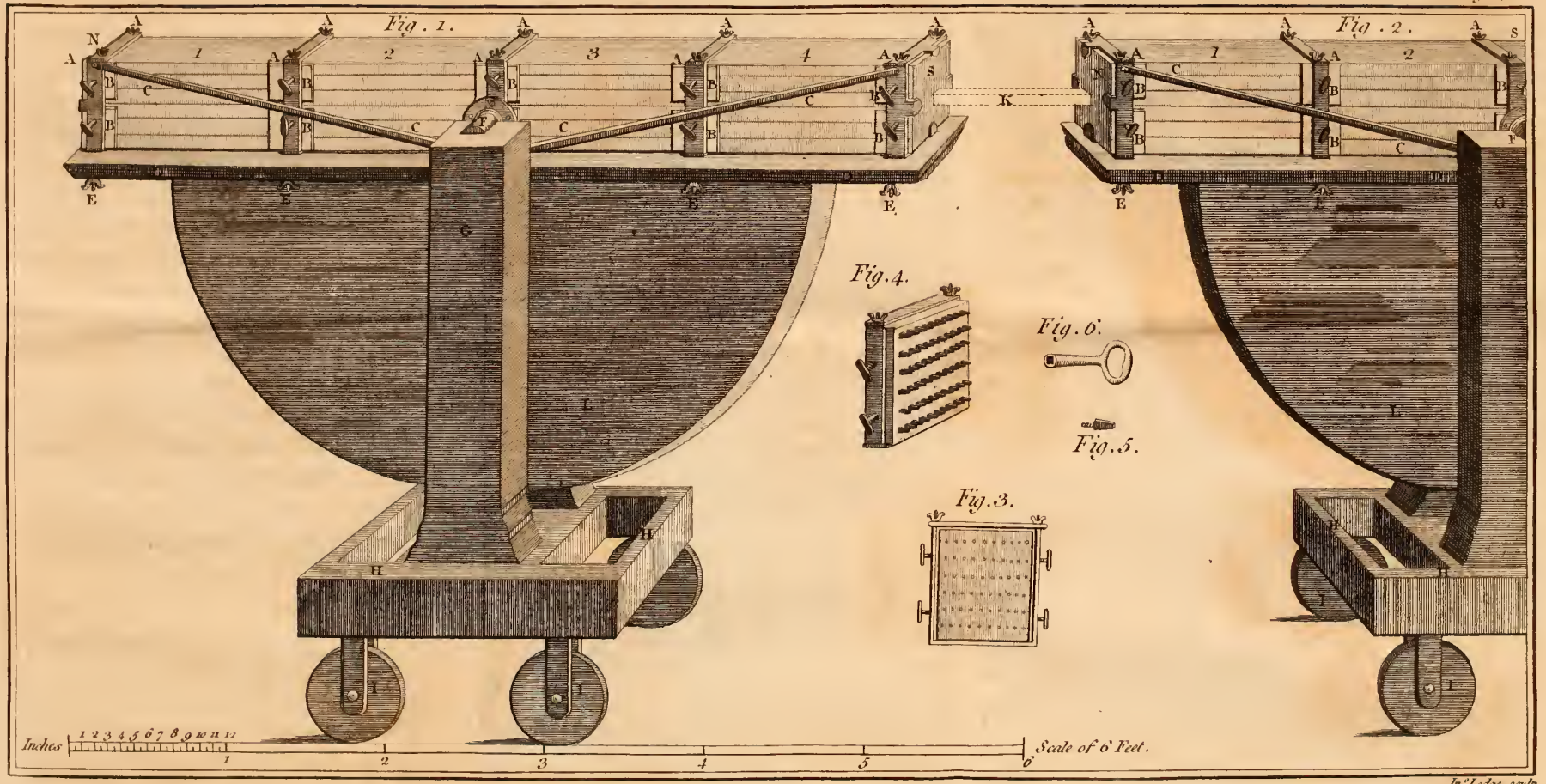
and the leaves themſelves are all, without exception, deeply ſerrated like the arbutus. Dr. Ruſſell alſo informs me, that the outer bark of the old ſtem and branches abroad, are for ſome months of the year of as beautiful a crimſon, as the young ſhoots are here deſcribed to be, and doubts not but it will be ſo in this country, as the ſhrub grows older *.

* It may not be improper to mention, that the flower ſpike above deſcribed, with the glandular prominences, which were the rudiments of future flowers, made their appearance ſoon after Midſummer 1765: they advanced very ſlowly during the remains of ſummer; ſtood the winter under a ſlight cover, and made no great progreſs, till within a month of their flowering.

That plant, which produced theſe flowers, was one of ſeveral, which J. Gordon, of Mile End, was fortunate enough to raiſe from ſeed, ſent by Dr. Ruſſell from Aleppo, in 1754; and that this ſhould be the only plant which has hitherto produced flowers, is probably owing principally to its having been divers times tranſplanted.

J. Fothergill.

MAGNETICAL MACHINE.



AN

ACCOUNT

OF THE

MAGNETICAL MACHINE

Contrived by the late Dr. *Gowin Knight*, F. R. S. and presented to The Royal Society, by *John Fothergill*, M. D. F. R. S. *

Read before the ROYAL SOCIETY, June 27, 1776.

To the President and Fellows of the Royal Society.

Gentlemen,

BY being left executor to your late worthy member, Gowin Knight, M. B. a very extraordinary Magnetic Machine of his contrivance, and which had cost him much labour and expence, came into my possession. This, I thought, might not be unworthy of a place in your repository; and I therefore desire your acceptance of it, as a monument of Dr. Knight's very singular abilities, and of my regard to the purposes of your institution.

I must, however, inform you, that this Ma-

* Philosophical Transactions, vol. lxvi. anno 1776, p. 591.

chine, which, by the annexed figure, and its explanation, may be obſerved to conſiſt of two parts, is by no means ſo ſtrongly magnetical as it was at the Doctor's deceaſe. Not long after this event, it was neceſſary to remove this apparatus from his apartments in the Britiſh Muſeum. One of theſe parts was fixed up in your Muſeum, the other was left at the lodgings of one of your very uſeful, ingenious members, J. H. de Magellan, for the purpoſe of ſome experiments, and alſo for impregnating ſtrongly the needles of ſea-compaſſes. Here it was accidentally deſtroyed by fire, and the parts it conſiſted of rendered almoſt wholly uſeleſs. A new one has, however, been made, and impregnated with the magnetical power, by the ingenious gentleman above-mentioned, according to the method of Dr. Knight. It has acquired a conſiderable degree of magnetic force, by being placed in the polar line with the other part of this machine that was unhurt, and where in time it will, perhaps, acquire a conſiderable degree of magnetic energy.

I wiſh it had been in my power to have given a minute and pertinent detail of my deceaſed friend's diſcoveries in this branch of knowledge. He acquainted me, it is true, at different times in converſation, of the progreſs he had made in theſe diſcoveries; but, as I then thought he intended to leave behind him an exact account of his experiments and reſearches, and their reſult, I only liſtened to his relations as mat-

ters

ters of inſtructive amuſement, not thinking it would ever be neceſſary for any other perſon than himſelf to give the public an account of his labours. Indeed, there are many uſeful memorials of his on this ſubject, in your collections, to which I muſt refer the inquiſitive reader. I ſhall only mention ſome circumſtances relative to this machine, which I do not know have been related either by himſelf or any other perſon.

The firſt thing, I believe, that engaged the Doctor's attention more particularly to magnetiſm, was the accident that befel a ſhip's compaſs from lightning; and of which, I think, he gave a very circumſtantial account to the Society. This affair led him to conſider the ſtructure of the compaſs more minutely. He procured compaſs-cards ready-armed, as it is called, from different makers both at home and abroad. He found moſt of the needles ſtrangely erring from due polarity; ſome being many points to the Weſt, others as many to the Eaſt, of the right poſition. Amongſt them all there was only one, which to him ſeemed conſtructed on a rational plan, and was of French make, procured from Marſeilles; but even this was not without very evident faults.

To fix upon the proper form of a needle through which the magnetic effluvia could paſs with the leaſt interruption, to give the needle ſuch a degree of hardneſs as to retain the mag-

netic influx the longeſt, and with the greateſt force, were material objects; and, I imagine, a view to have ſuch a degree of magnetic power at his command, as to force the magnetic virtue through the moſt conſolidated bars, was his firſt inducement to try, whether he could not collect ſuch a magazine of magnetiſm, as would be ſufficient for every purpoſe of this kind, and at the ſame time exhibit ſome new phenomena in phyſics yet undiſcovered. With this view he planned and executed the machine, deſcribed at the end of this relation.

His firſt attempt, however, was much ſmaller; a few bars were laid in the due courſe of the magnetic flux, and impregnated by conſtant attrition. To theſe, other bars were added ſucceſſively, after they had been impregnated, both by the force he could give them by attrition, and what he could derive from the preceding ſtock collected in the bars. To theſe he added ſtill freſh bars, till he had formed the whole maſs as it is now preſented to you, and reſting on wheels and pivots, in ſuch manner as to be eaſily manageable for the purpoſe of impregnating the needles he was employed to ſee prepared, for the ſervice of government, and others, who had generoſity enough to think, that the compaſs, on which depended the lives of the ſhip's crew, could not be made too perfect, and that it deſerved a reaſonable compenſation. It is to the Doctor's ingenuity and indefatigable attention

attention to this useful instrument, that it has acquired amongst us a degree of perfection unknown to our predecessors.

When the machine was compleated, he still was adding continually to its power. He impregnated every single bar of which it is composed, by repeated attritions, and applied it to the remaining bars in their magnetic position. After this operation, he always found its efficacy, for a season, considerably diminished; for the effluvia of each bar, though increased in virtue, seemed not immediately to have acquired a communication with each other. However, it grew always more powerful after each of these operations; and it is more than probable, if a person could be found, who, with equal patience and skill, would, at proper distances, repeat the same process, that the present machine would acquire a degree of force superior to what the original ever possessed; for much depends upon time, and a due position. If to these was added a fresh impregnation of each single bar, by the means hitherto made use of, you would probably possess a larger fund of magnetic power, than exists in any artificial magnet now in being.

But if this cannot be obtained, if an able person cannot be prevailed upon to renew its vigour in this manner, it might possibly afford the curious some satisfaction to know, whether, in its present state, it loses any force, or acquires fresh virtue; to know, with some degree of precision,

preciſion, how much weight it will now ſuſpend; and to obſerve annually its variation. I need not ſuggeſt, that a trial of this nature demands no ſmall attention. Even the motion of a carriage in the ſtreet, though at ſuch a diſtance as the Society's apartments, will make a conſiderable variation.

I do not know, that the Doctor left behind him any deſcription of a compoſition he had made to form artificial loadſtones. I have ſeen in his poſſeſſion, and many other of his friends have likewiſe ſeen, ſuch a compoſition; which retained the magnetic virtue in a manner much more fixed, than either any real loadſtone, or any magnetic bar, however well tempered. In the natural ones he could change the poles in an inſtant, ſo likewiſe in the hardeſt bars; but in the compoſition the poles were immoveable. He had ſeveral ſmall pieces of this compoſition, which had ſtrong magnetic powers. The largeſt was about half an inch in breadth, very little longer than broad, and near a quarter of an inch thick. It was not armed, but the ends were powerfully magnetic; nor could the poles be altered, though it was placed between two of his largeſt bars, and they were very ſtrongly impregnated. The maſs was not very heavy, and had much the appearance of a piece of black lead, though not quite ſo ſhining. I believe he never divulged the compoſition; but, I think, he once told me, the baſis of it was filings of iron, reduced by long-continued attrition with water to a perfectly

fectly impalpable ſtate, and then incorporated with ſome pliant matter, to give it due conſiſtence*. Perhaps ſome of his acquaintance may have

* The following account of Dr. Knight's method of making artificial Loadſtones, was communicated by Benjamin Wilſon, F. R. S. in a letter to Sir Joſeph Banks, Baronet, P. R. S. Read before the Royal Society, December 17, 1778. *Editor.*

Sir,

The method of making artificial Loadſtones, as it was diſcovered and practiſed by the late Dr. Gowin Knight, being unknown to the Public, and I myſelf having been frequently preſent when the Doctor was employed in the moſt material ſteps of that curious proceſs, I thought a communication thereof would be agreeable to you and the philoſophic world.

The method was this:—Having provided himſelf with a large quantity of clean filings of iron, he put them into a large tub that was more than one-third filled with clean water: he then, with great labour, worked the tub to and fro for many hours together, that the friction between the grains of iron by this treatment might break off ſuch ſmaller parts as would remain ſuſpended in the water for a time. The obtaining of thoſe very ſmall particles in ſufficient quantity, ſeemed to him to be one of the principal *deſiderata* in the experiment.

The water being by this treatment rendered very muddy, he poured the ſame into a clean earthen veſſel, leaving the filings behind; and when the water had ſtood long enough to become clear, he poured it out carefully, without diſturbing ſuch of the iron ſediment as ſtill remained, which now appeared reduced almoſt to impalpable powder. This powder was afterwards removed into another veſſel, in order to dry it; but as he had not obtained a proper quantity thereof by this one ſtep, he was obliged to repeat the proceſs many times.

Having at laſt procured enough of this very fine powder,

have been more fully informed of this circumſtance; and it may be rendering great aid to future enquirers, to know every thing that can be collected relative to ſo curious a ſubject.

Leſt the machine itſelf ſhould be deſtroyed by the ſame accident as that which deſtroyed a part of it, I thought an exact repreſentation of

the next thing to be done was to make a paſte of it, and that with ſome vehicle which would contain a conſiderable quantity of the phlogiſtic principle; for this purpoſe he had recourſe to linſeed-oil in preference to all other fluids.

With theſe two ingredients only he made a ſtiff paſte, and took particular care to knead it well before he moulded it into convenient ſhapes. Sometimes, whilſt the paſte continued in its ſoft ſtate, he would put the impreſſion of a ſeal upon the ſeveral pieces; one of which is in the Britiſh Muſeum.

This paſte was then put upon wood, and ſometimes on tiles, in order to bake or dry it before a moderate fire, at a foot diſtance, or thereabouts.

The Doctor found, that a moderate fire was moſt proper, becauſe a greater degree of heat made the compoſition frequently crack in many places.

The time required for the baking or drying of this paſte was generally five or ſix hours, before it attained a ſufficient degree of hardneſs. When that was done, and the ſeveral baked pieces were become cold, he gave them their magnetic virtue in any direction he pleaſed, by placing them between the extreme ends of his large magazine of artificial magnets for a few ſeconds or more, as he ſaw occaſion.

By this method the virtue they acquired was ſuch, that when any one of thoſe pieces was held between two of his beſt ten-guinea bars, with its poles purpoſely inverted, it immediately of itſelf turned about to recover its natural direction, which the force of thoſe very powerful bars was not ſufficient to counteract.

I am, &c.

it,

it, and its ſeveral parts, might be the beſt means of preſerving it to future times, if inſerted in the Tranſactions of the Royal Society.

Explanation of the Plate.

Plate III. ſhews the magazines according to the Doctor's laſt diſpoſition of them. The two being perfectly alike, therefore fig. 2. contains only the half of one of them. Each magazine conſiſts of 240 bars, diſpoſed in four lengths, marked 1. 2. 3. 4.; every length containing ſixty bars, placed in ſix courſes or layers, in contact one on another; and ten in each courſe, placed ſide by ſide, in contact alſo. The bars being very nearly of a ſize, the ends of thoſe in one length are in contact with the correſponding ends of thoſe in the adjacent lengths. The magnetical North-ends of theſe bars, in each magazine, are all directed one way towards N; and the South-ends the contrary way toward S; thick plates of iron cover theſe ends N and S; the junction of the ends of the bars fall under the braſs braces AA.

As it has been found difficult, after the final hardening of theſe bars, to preſerve among them a perfect equality in ſize; therefore, the contact of their ſides are perfected by thin iron plates BB, ſlipped in between the braces AA and the junction of the ends of the bars: and theſe

plates BB, being preſſed by the ſcrews paſſing through the ſides of the braces AA, keep the ends of the bars in as cloſe contact as their figures will permit; and, that the bars may be kept end to end in contact, the iron plate at the North-end in fig. 1. and at the South-end in fig. 2. is perforated with ſixty holes, one againſt the end of each bar, as ſhewn at fig. 3. with a ſcrew fitted to each hole, as ſhewn at fig. 4.: every ſcrew having a ſquare head as at fig. 5. may, by help of the key, fig. 6. be turned, and, by preſſing againſt the end of the bar in the fourth length, force it againſt its abutting bar in the third length, and ſo on till the bars, end to end, are brought into contact and kept ſo. The braces are in two pieces; the ſides and bottom in one; and the other piece forms the top AA, which is held cloſe to the bars by the ſcrews paſſing through it into the upright ſides of the braces; and, to keep the braces at N and S ſteadily in their places, the two long braces CC are affixed.

As each of theſe magazines weighed about 500 lbs. it became neceſſary to have them ſo placed as to be conveniently uſed. The Doctor, therefore, by ſcrews fixed the braces, containing the bars, to a ſtrong mahogany plank DD, about 1 inch and $\frac{3}{4}$ thick; the ſcrews paſſing through the plank entered the bottom parts of the braces AA. Againſt the middle of the whole length, two ſtrong braſs plates are well fixed to the ſides of the plank; to theſe braſs plates are fixed two

cylindrical gudgeons F, which projecting from the ſides, like the trunnions of a cannon, lie in the ſockets of the ſtandard G, whereby the magazine eaſily turns, as on an axis; and is ſo well poized as to ſtand in any inclination of the line NS; and in this the equilibrium is aſſiſted by the ſtrong mahogany ſemi-circular pieces LL, fixed in a vertical poſition to the middle of the under part of the plank DD, on which the magnetic apparatus reſts. The ſtandards G are fixed to the ſquare frame HH, and the whole ſupported on the four trucks II, whereby the two magazines are eaſily brought end to end, or ſet at a convenient diſtance, ſo as to admit a bar K, to be placed between the ends, to be made magnetical.

END OF THE FIRST VOLUME.